

	1929	1930	1931	1932	1933	1934
Total supply	2,545,226	2,358,169	1,928,406	2,348,802	3,273,017	3,731,842
Amount exported	181,944	238,580	203,547	299,867	435,297	254,953
Home consumption	2,363,282	2,124,589	1,724,859	2,048,935	2,837,720	3,476,889
Percentage of production to consumption	73	90	96	103	101	95

Coal Mining

Coal surpasses all other mineral products both in quantity and money value, the 1936 production amounted to 41,803,000 metric tons with an aggregate of ¥305,537,000. Both the output and

value for the year were the heaviest for 10 years since 1926. Compared with the 1935 production, the output gained 4,076,509 tons and the value ¥35,359,904. The year 1936 was the most prosperous year for the coal industry. Details follow:

SUPPLY AND DEMAND OF COAL

(In metric tons)

	1934	1935	1936
Coal actually marketed	35,924,989	37,762,000	41,000,000
Coal imported	3,997,000	4,049,000	4,189,000
Coal stocks at the beginning of	1,226,000	657,000	722,000
Total coal supply	41,147,989	42,468,000	45,911,000
Coal exported	1,070,000	1,019,000	1,112,000
Coal stocks at the end of	678,000	722,000	698,000
Coal demand in Japan Proper	39,399,000	40,727,000	44,101,000

Japan's coal production since 1913 follows:

(In 1,000 metric tons)

1913	21,315	1921	26,220	1929	34,257
1914	22,293	1922	27,701	1930	31,376
1915	20,490	1923	28,948	1931	27,907
1916	22,910	1924	30,110	1932	28,053
1917	26,361	1925	31,459	1933	32,523
1918	28,029	1926	31,426	1934	35,924
1919	31,271	1927	33,530	1935	37,762
1920	29,245	1928	33,860	1936	41,000

Business results of the coal-mining companies in recent years were:

	No. of companies	Authorized capital (In yen)	Reserve fund
1928	105	386,413,700	26,868,288
1929	100	368,593,200	30,326,664
1930	88	343,913,200	30,975,007
1931	87	365,800,700	30,149,827
1932	88	352,510,700	29,692,489
1933	99	—	31,823,000
1934	113	470,097,200	60,394,926
	Profit	Dividend (In yen)	Net loss
1928	11,711,498	7,142,008	13,011,820
1929	12,706,871	8,568,725	3,093,942
1930	8,351,933	6,449,626	18,212,362
1931	4,424,070	4,183,130	5,654,419
1932	4,674,374	3,826,245	9,514,950
1933	—	—	—
1934	30,716,855	19,847,553	995,199

Coal Deposits No survey of coal resources was undertaken between the years 1911 and 1931, but in the latter year the Mining Bureau of the Depart-

ment of Commerce and Industry commenced a survey which took 2 years to complete. The results, compared with the 1911 survey, are:

Investigation in 1932

	Anthracite Natural Coal	Bituminous Coal	Lignite	Total	%
Amount, already mined	29,888	984,130	6,965	1,020,483	5
Amount, unminable	39,332	991,673	18,859	1,049,864	6
Amount, minable	718,782	15,499,091	473,460	16,671,333	89
Percentage	4%	93%	3%	100%	
Amount minable					
Actual deposits	454,745	5,439,905	65,765	5,960,415	36
Probable deposits	131,944	3,780,975	132,582	4,045,501	24
Possible deposits	132,093	6,278,211	275,113	6,685,417	40

Investigation in 1911

	Coal	Lignite	Total	%
Amount, already mined	283,200	—	283,200	3
Amount, unminable	—	—	—	—
Amount, minable	8,792,000	347,570	9,139,450	100
Percentage	86%	4%	100%	
Amount minable				
Actual deposits	822,000	75,770	897,770	10
Probable deposits	2,940,000	205,000	3,145,000	34
Possible deposits	5,030,000	66,700	5,096,700	56

Note: "Amount unminable" indicates the deposits, such as portions between pits, officially prohibited regions and where no pick is allowed.

"Probable deposits" as judged geologically and from conditions of coal seams and which can be presumed as available in future.

"Possible deposits" represent the deposits imagined to be there and are the most uncertain of all.

Petroleum

Production The home yield of crude oil until about 1916 was approximately 2,000,000 koku, by no means sufficient to satisfy domestic demand. Notwithstanding yearly increase in demand output was unable to keep pace with it so that by 1927 domestic production was only able to satisfy 25% of the

home consumption. The percentage has since increased and in 1932 was about 44%.

According to investigations conducted by the Nippon Petroleum Oil Company, the most important producer of crude oil, wells with a daily output of 20 kilolitres (approximately 111 koku) and over numbered no more than the following 7.

Location	Name of Well	Date	Depth	Daily Output during 10 Days after Successful Date
Kashiwazaki	Warimachi Ro Style No. 3	Jan. 6	1,240 metres	24.64 kilolitres
"	Warimachi Ro Style No. 20	Feb. 11	1,246 "	27.13
"	Takamachi Ro Style No. 35	April 2	1,240 "	22.50
"	Takamachi Ro Style No. 36	April 24	1,240 "	34.08
"	Warimachi Ro Style No. 27	May 14	1,255 "	30.45
"	Warimachi Ro Style No. 14	June 11	1,325 "	32.88
"	Warimachi Ro Style No. 36	July 20	1,284 "	60.60

Supply and Demand One of the most conspicuous features in the oil production for the five years, 1931-1935 was

the marked increase in the use of foreign crude oil in the manufacture of heavy oil. The amount for 1935 set an

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amount was falling, but the 1935 amount gained again, due to a rapid growth of demand at home. The amount of home consumption for 1935 was the heaviest known so far. Below are given detailed figures on the supply and demand of oil:

SUPPLY AND DEMAND OF OIL (in hl.)

(1 case=9.5 gallons)

Classification	Year	Production		Total	Imports
		From Home Oil	From Foreign Oil		
Gasolene Oil	1932	628,474	3,105,810	3,734,284	4,401,880
	1933	394,737	3,533,429	3,928,166	4,625,860
	1934	349,470	4,436,050	4,785,520	5,505,290
	1935	436,760	5,341,710	5,778,470	5,925,440
	1936	2,378,000	17,165,000	19,543,000	19,250,000
	1936 (in case)	1,228,000	2,063,000	3,831,000	2,526,000
Kerosene Oil	1932	244,758	579,299	824,057	700,500
	1933	203,660	589,694	793,354	576,510
	1934	206,700	709,780	916,480	877,780
	1935	296,500	828,600	1,125,100	933,560
	1936	1,228,000	2,063,000	3,831,000	2,526,000
	1936 (in case)	733,672	1,483,508	2,217,180	—
Light Oil	1932	563,824	1,404,971	1,968,795	—
	1933	663,730	1,332,810	1,996,540	—
	1934	609,270	1,185,160	1,794,430	—
	1935	1,375,000	2,789,000	4,164,000	222,000
	1936	511,969	1,133,088	1,645,057	353,890
	1936 (in case)	455,520	1,555,840	2,011,360	241,140
Machine Oil	1932	592,160	1,761,540	2,353,700	389,620
	1933	743,510	1,631,610	2,375,120	425,290
	1934	1,815,000	4,985,000	6,800,000	1,787,000
	1935	205,354	507,623	712,977	12,990,330
	1936	214,203	1,062,168	1,276,371	13,016,430
	1936 (in case)	376,020	1,870,990	2,247,010	10,166,350
Heavy Oil	1932	853,190	2,438,240	3,291,430	20,289,300
	1933	3,659,000	8,295,000	11,954,000	36,463,000
	1934	2,324,227	6,809,328	9,133,555	18,452,340
	1935	1,836,944	8,146,102	9,983,046	10,459,940
	1936	2,188,080	10,111,170	12,299,250	22,933,340
	1936 (in case)	2,939,230	11,425,320	14,364,550	20,244,290
Total	1932	10,455,000	35,837,000	46,291,000	50,248,000
	1933	—	—	—	—
	1934	—	—	—	—
	1935	—	—	—	—
	1936	—	—	—	—
	1936 (in case)	—	—	—	—

SUPPLY AND DEMAND OF OIL (in hl.)

(1 case=9.5 gallons)

Classification	Year	Total	Exports	Balance Consumed at Home	Percentage of Production to Demand
Gasolene Oil	1932	8,135,724	—	8,135,724	45.0
	1933	8,554,026	—	8,554,026	45.0
	1934	10,290,810	—	10,290,810	47.0
	1935	11,703,910	27,180	11,676,730	40.0
	1936	38,712,000	81,000	—	—
	1936 (in case)	1,524,557	120,140	1,404,417	58.7
Kerosene Oil	1932	1,374,864	51,000	1,323,864	60.3
	1933	1,794,260	44,320	1,749,940	52.0
	1934	2,058,660	110,890	1,947,790	50.0
	1935	5,493,000	864,000	—	—
	1936	—	—	—	—
	1936 (in case)	—	—	—	—

Classification	Year	Total	Export	Balance Consumed at Home	Percentage of Production to Demand
Light Oil	1932	2,217,180	—	2,217,180	100.0
	1933	1,968,795	—	1,968,795	100.0
	1934	1,996,540	—	1,996,540	100.0
	1935	1,794,430	—	1,794,430	100.0
	1936	3,872,000	514,000	—	—
	1936 (in case)	1,998,947	124,850	1,874,097	87.8
Machine Oil	1932	2,252,500	203,960	2,048,540	98.2
	1933	2,743,320	288,640	2,454,680	96.0
	1934	2,800,410	270,540	2,529,870	94.0
	1935	6,134,000	453,000	—	—
	1936	13,709,507	—	13,709,507	5.2
	1936 (in case)	14,292,801	—	14,292,801	3.9
Heavy Oil	1932	18,412,560	—	18,412,560	12.0
	1933	24,251,420	—	24,251,420	14.0
	1934	47,331,000	86,000	—	—
	1935	27,535,915	244,990	27,340,925	33.4
	1936	28,442,986	254,960	28,188,026	35.4
	1936 (in case)	35,237,490	332,960	34,904,530	35.0
Total	1932	42,608,830	408,590	42,200,240	34.0
	1933	103,542,000	1,998,000	—	—
	1934	—	—	—	—
	1935	—	—	—	—
	1936	—	—	—	—
	1936 (in case)	—	—	—	—

Artificial Petroleum In view of the necessity of developing artificial petroleum industry as a means of covering the shortage of the resources of natural petroleum in this country, the Government formulated a plan to establish a company with a capital of ¥100,000,000 to take charge of the task.

At present, the annual consumption of petroleum in this country amounts to approximately 3,000,000 metric tons, not including the demand of the Imperial Navy. As the domestic production still remains in the neighbourhood of 300,000 metric tons, the nation has to look for 90 per cent of its demand in foreign petroleum, mainly supplied by British and American oil interests. The policy for the compulsory storage of a fixed amount of oil by foreign oil concerns in the country is merely a negative measure like the policy for economizing petroleum.

Compelled by the present extraordinary international situation to take positive measures, the Government has resolved to establish the artificial petroleum industry by three methods comprising technical assistance, financial assistance through government investments, and encouragement for production.

The Fuel Research Institute of the Ministry of Commerce and Industry, which is located at Kawaguchi City in Saitama Prefecture, has succeeded in its experiments aiming to transfer from the laboratory to the plant the manufacturing of artificial petroleum by the three processes of low temperature, dry

distillation, direct liquefaction and synthesis of oils. This success has led to the decision to establish a model State-managed plant in the Hokkaido at a cost of some ¥20,000,000 as an enterprise spreading over a period of three years beginning with the 1937-38 fiscal year.

Unlike the private enterprises which have already been placed on industrial basis, the enterprise of the Ministry of Commerce and Industry, which is undertaken through the creation of a new department in the Fuel Research Institute, will be featured by an attempt to lower the production cost through rationally employing the aforementioned three processes. The minimum amount of annual production required for placing the enterprise on industrial basis is estimated at 20,000 tons. When this State enterprise proves successful, additional plants on the same scale are expected to be established in other suitable places.

It is to be noted that in undertaking to embark upon the enterprise, the Government also aims at the training of technicians to be charged with the task of guiding the private enterprises. In other words, the new department of the Fuel Research Institute will play the role of a pilot of new enterprises.

The organization of a ¥100,000,000 investment company as a semi-official concern was decided upon in view of the necessity of the Government extending financial aid to the industrialists for embarking upon the enterprises of national importance. According to the

all-time record of 35,837,000 cases, one case being 9.5 gallons, far larger than the preceding four years. The supply of the heavy oil manufactured out of home crude oil for 1935 was fairly heavy, second in amount from a previous record of 3,017,310 hl. for 1931. For three years following 1931 the

amount was falling, but the 1935 amount gained again, due to a rapid growth of demand at home. The amount of home consumption for 1935 was the heaviest known so far. Below are given detailed figures on the supply and demand of oil:

SUPPLY AND DEMAND OF OIL (in hl.)

(1 case=9.5 gallons)

Classification	Year	Production		Total	Imports
		From Home Oil	From Foreign Oil		
Gasolene Oil	1932	628,474	3,105,810	3,734,284	4,401,440
	1933	394,737	3,533,429	3,928,166	4,625,860
	1934	349,470	4,436,050	4,785,520	5,505,290
	1935	436,760	5,341,710	5,778,470	5,925,440
	1936	2,378,000	17,165,000	19,543,000	19,250,000
	1936 (in case)	1,228,000	2,063,000	3,831,000	2,526,000
Kerosene Oil	1932	244,758	579,299	824,057	700,500
	1933	208,660	589,694	798,354	570,510
	1934	206,700	709,780	916,480	877,730
	1935	296,500	828,600	1,125,100	933,560
	1936	1,375,000	2,789,000	4,164,000	222,000
	1936 (in case)	1,375,000	2,789,000	4,164,000	222,000
Light Oil	1932	733,672	1,483,508	2,217,180	—
	1933	563,824	1,404,971	1,968,795	—
	1934	663,730	1,332,810	1,996,540	—
	1935	609,270	1,185,160	1,794,430	—
	1936	1,375,000	2,789,000	4,164,000	222,000
	1936 (in case)	1,375,000	2,789,000	4,164,000	222,000
Machine Oil	1932	511,969	1,133,088	1,645,057	353,890
	1933	455,520	1,555,840	2,011,360	241,140
	1934	592,160	1,761,540	2,353,700	380,620
	1935	743,510	1,631,610	2,375,120	425,290
	1936	1,815,000	4,985,000	6,800,000	1,787,000
	1936 (in case)	1,815,000	4,985,000	6,800,000	1,787,000
Heavy Oil	1932	205,354	507,623	712,977	12,090,530
	1933	214,203	1,062,168	1,276,371	13,016,430
	1934	376,020	1,870,990	2,247,010	16,105,530
	1935	853,190	2,438,240	3,291,430	20,939,290
	1936	3,659,000	8,295,000	11,954,000	35,403,000
	1936 (in case)	3,659,000	8,295,000	11,954,000	35,403,000
Total	1932	2,324,227	6,809,328	9,133,555	18,452,300
	1933	1,836,944	8,146,102	9,983,046	18,459,940
	1934	2,188,080	10,111,170	12,299,250	22,038,240
	1935	2,939,230	11,425,320	14,364,550	28,214,230
	1936	10,455,000	35,837,000	46,291,000	69,240,000
	1936 (in case)	10,455,000	35,837,000	46,291,000	69,240,000

SUPPLY AND DEMAND OF OIL (in hl.)

(1 case=9.5 gallons)

Classification	Year	Total	Exports	Balance Consumed at Home	Percentage of Production to Demand
Gasolene Oil	1932	8,135,724	—	8,135,724	45.9
	1933	8,554,026	—	8,554,026	45.9
	1934	10,290,810	—	10,290,810	47.0
	1935	11,703,910	27,180	11,676,730	40.0
	1936	38,712,000	81,000	—	—
	1936 (in case)	38,712,000	81,000	—	—
Kerosene Oil	1932	1,524,557	120,140	1,404,417	58.7
	1933	1,374,864	51,000	1,323,864	60.2
	1934	1,794,260	44,320	1,749,940	52.0
	1935	2,058,660	110,890	1,947,790	58.0
	1936	5,493,000	864,000	—	—
	1936 (in case)	5,493,000	864,000	—	—

Classification	Year	Total	Export	Balance Consumed at Home	Percentage of Production to Demand
Light Oil	1932	2,217,180	—	2,217,180	100.0
	1933	1,968,795	—	1,968,795	100.0
	1934	1,996,540	—	1,996,540	100.0
	1935	1,794,430	—	1,794,430	100.0
	1936	3,872,000	514,000	—	—
	1936 (in case)	3,872,000	514,000	—	—
Machine Oil	1932	1,998,947	124,850	1,874,097	87.8
	1933	2,252,500	203,960	2,048,540	98.2
	1934	2,743,320	208,640	2,454,680	96.0
	1935	2,800,410	270,540	2,529,870	94.0
	1936	8,134,000	453,000	—	—
	1936 (in case)	8,134,000	453,000	—	—
Heavy Oil	1932	13,709,507	—	13,709,507	5.2
	1933	14,292,801	—	14,292,801	8.9
	1934	18,412,560	—	18,412,560	12.0
	1935	24,251,420	—	24,251,420	14.0
	1936	47,331,000	86,000	—	—
	1936 (in case)	47,331,000	86,000	—	—
Total	1932	27,535,915	244,990	27,340,925	33.4
	1933	28,442,986	254,960	28,188,026	35.4
	1934	35,237,490	332,960	34,904,530	35.0
	1935	42,608,830	408,590	42,200,240	34.0
	1936	103,542,000	1,998,000	—	—
	1936 (in case)	103,542,000	1,998,000	—	—

Artificial Petroleum In view of the necessity of developing artificial petroleum industry as a means of covering the shortage of the resources of natural petroleum in this country, the Government formulated a plan to establish a company with a capital of ¥100,000,000 to take charge of the task.

At present, the annual consumption of petroleum in this country amounts to approximately 3,000,000 metric tons, not including the demand of the Imperial Navy. As the domestic production still remains in the neighbourhood of 300,000 metric tons, the nation has to look for 90 per cent of its demand in foreign petroleum, mainly supplied by British and American oil interests. The policy for the compulsory storage of a fixed amount of oil by foreign oil concerns in the country is merely a negative measure like the policy for economizing petroleum.

Compelled by the present extraordinary international situation to take positive measures, the Government has resolved to establish the artificial petroleum industry by three methods comprising technical assistance, financial assistance through government investments, and encouragement for products.

The Fuel Research Institute of the Ministry of Commerce and Industry, which is located at Kawaguchi City in Saitama Prefecture, has succeeded in its experiments aiming to transfer from the laboratory to the plant the manufacturing of artificial petroleum by the three processes of low temperature, dry

distillation, direct liquefaction and synthesis of oils. This success has led to the decision to establish a model State-managed plant in the Hokkaido at a cost of some ¥20,000,000 as an enterprise spreading over a period of three years beginning with the 1937-38 fiscal year.

Unlike the private enterprises which have already been placed on industrial basis, the enterprise of the Ministry of Commerce and Industry, which is undertaken through the creation of a new department in the Fuel Research Institute, will be featured by an attempt to lower the production cost through rationally employing the aforementioned three processes. The minimum amount of annual production required for placing the enterprise on industrial basis is estimated at 20,000 tons. When this State enterprise proves successful, additional plants on the same scale are expected to be established in other suitable places.

It is to be noted that in undertaking to embark upon the enterprise, the Government also aims at the training of technicians to be charged with the task of guiding the private enterprises. In other words, the new department of the Fuel Research Institute will play the role of a pilot of new enterprises.

The organization of a ¥100,000,000 investment company as a semi-official concern was decided upon in view of the necessity of the Government extending financial aid to the industrialists for embarking upon the enterprises of national importance. According to the

tentative plan, the new company will be called the Imperial Fuel Company and will aim at the annual production of 2,000,000 tons of artificial petroleum, including 1,000,000 tons of volatile oil and 1,000,000 tons of heavy oil.

This aim is to be attained through the execution of a seven-year programme. For this purpose, the Government has decided to authorize the new company to issue debentures to a total amount three times that of its capital (or five times in case the capital fails to reach ¥100,000,000 due to a curtailment of the budget estimates). In order to encourage private investments, it was also decided to guarantee a dividend of 3.5 per cent during the first three years and of 5 per cent later on for the private shares of the company, with the government shares receiving no dividend in case the profits of the company do not amount to 5 per cent.

With a view to the sound development of the artificial petroleum industry, the Government has decided to enforce a control through the adoption of the licensing system for the industry. Not only the enterprises to be launched in the future but the already com-

menced enterprises also are required to obtain the license so that they may enjoy the privilege of securing the investments of the semi-official investment company referred to above. It is estimated that all the enterprises will involve a huge sum of ¥700,000,000 upon the completion of the six-year programme, comprising ¥400,000,000 in the investments of the semi-official concern, ¥200,000,000 in the investments of enterprisers and ¥100,000,000 in the expenses for 10,000,000 tons of coal liquefaction to produce 2,000,000 tons of artificial petroleum.

The production costs of artificial petroleum products are estimated to average ¥0.8 per gallon under the existing circumstances while the present quotation of gasoline is ¥0.51. Through the imposition of a gasoline tax as well as the raising of the tariffs, the Government expects to advance the prices of petroleum by about ¥0.10 per gallon. This, however, would still leave a margin of around ¥0.20 between the production cost and market price and accordingly, the Government plans to adopt a compensation system.

Producers and Operatives

BUSINESS RESULTS OF MINING COMPANIES

Year	No. of Companies	Capital	Reserve	Net Profit	Dividend	Net Loss
			(In yen)			
1927	363	1,096,506,935	121,941,624	41,842,808	29,969,452	18,180,059
1928	371	1,005,230,192	131,375,307	44,281,532	30,562,085	18,457,887
1929	394	1,060,690,693	116,771,370	57,316,880	34,158,513	19,019,463
1930	376	954,242,273	100,696,580	30,339,837	22,930,041	23,112,090
1931	383	961,868,883	97,793,798	19,027,144	15,651,820	15,857,406
1932	389	951,969,923	96,961,747	26,812,546	19,093,927	12,647,560
1933	427	975,954,664	96,736,497	50,605,374	31,914,230	5,509,475
1934	515	1,066,996,905	120,127,123	76,317,610	49,989,059	2,228,960
1935	611	1,269,098,458	141,984,183	98,089,442	63,862,501	3,250,888
1936	697	1,418,426,383	170,580,240	113,489,849	69,684,072	8,916,621

MINING COMPANIES BY KINDS IN 1936

(Prepared by the Department of Commerce and Industry)

Kind of Mining	Number	Amount Invested and Authorized Capital	Reserves	Profits (in yen)	Dividend	Net Loss
Metal	247	647,422,427	66,918,532	55,788,944	33,031,854	1,858,869
Coal	145	553,201,756	72,743,516	43,952,537	27,524,797	6,545,721
Petroleum	28	160,675,000	27,029,137	10,158,112	6,589,622	75,523
Others	25	22,762,000	3,149,626	3,064,460	2,193,250	83,286
Stone	254	34,365,200	739,429	525,796	344,549	353,222
Total	697	1,418,426,383	170,580,240	113,489,849	69,684,072	8,916,621

NUMBER OF OPERATIVES ENGAGED IN MINING

At the end of June	Under 16 years			16-50 years		
	Male	Female	Total	Male	Female	Total
1929	2,870	1,085	3,955	215,895	51,934	267,829
1930	2,224	879	3,103	200,687	41,114	241,801
1931	1,045	382	1,427	167,869	24,551	192,420
1932	759	293	1,052	158,635	19,991	178,626
1933	950	339	1,289	174,021	20,358	194,379
1934	1,197	375	1,572	204,484	22,927	227,411
1935	1,521	433	1,954	222,988	24,176	247,164

	Over 50 years			Total		
	Male	Female	Total	Male	Female	Total
1929	13,095	2,085	15,180	231,860	55,104	286,964
1930	11,925	1,640	13,565	214,836	43,633	258,469
1931	7,458	1,050	8,508	176,472	25,983	202,985
1932	5,515	647	6,162	164,909	20,931	185,840
1933	5,969	683	6,652	180,940	21,380	202,320
1934	6,670	694	7,374	212,351	23,996	236,347
1935	7,517	780	8,297	232,026	25,715	257,741

CHAPTER XVIII

THE TEXTILE INDUSTRY

The number of operatives, mills, etc. for almost all kinds of textile industry in 1936 showed an increase over those of 1935, indicating that the industry as

a whole was very 'prosperous' in that year. The following table shows these figures:

NUMBERS OF OPERATIVES, MILLS, ETC. IN TEXTILE INDUSTRY IN 1936
AS COMPARED WITH THOSE IN 1935

Kind of Industry	No. of Mills		No. of Mills using Motors		No. of Officials		No. of Technicians	
	1935	1936	1935	1936	1935	1936	1935	1936
Silk reeling	2,926	2,637	2,764	2,496	5,418	4,962	5,066	5,137
Cotton spinning	593	638	590	633	3,779	4,325	3,070	3,440
Twisting	1,586	1,726	1,559	1,699	494	525	340	310
Weaving	14,388	15,028	13,500	14,163	6,632	6,775	5,001	4,660
Hosiery	1,635	1,679	1,411	1,451	914	1,088	534	634
Dyeing, refining, bleaching, assorting	3,145	3,307	2,409	2,483	3,633	4,029	2,538	2,544
Miscellaneous	1,289	1,343	1,176	1,217	926	1,000	468	458
Total	25,562	26,258	13,409	24,142	21,796	22,704	17,023	17,100

Kind of Industry	No. of Operatives				Others		Total Workers	
	Male		Female		1935	1936	1935	1936
Silk reeling	22,095	20,093	255,063	231,700	4,929	4,381	293,174	269,773
Cotton spinning	34,433	36,661	205,725	223,682	7,730	8,439	254,737	276,547
Twisting	5,454	5,439	17,721	19,880	276	291	24,291	25,443
Weaving	62,653	64,888	291,614	300,219	4,921	4,796	370,821	381,546
Hosiery	9,057	9,595	15,051	17,306	322	372	25,070	28,990
Dyeing, refining, bleaching, assorting	53,509	59,644	11,965	13,409	2,107	2,195	73,782	81,231
Miscellaneous	6,665	7,349	15,695	18,052	387	404	24,141	27,261
Total	193,866	203,669	812,837	824,248	20,672	20,878	1,066,794	1,088,638

General Conditions of Fibre Industry in 1937

Within a period of less than half a year after the Japan Cotton Spinners' Association had congratulated itself on the increasing prosperity of the cotton industry in the country at the regular general meeting held in the spring of 1937, a series of rapid changes took place in the textile manufacturing industry. In the first place, the cotton textile industry had to be placed on an entirely different basis. While previously the cotton industrial circles faced the problem of curtailment of production in order to conform to the demand, the problem now confronting the same circles was the shortage of supply of raw cotton. The production of cotton yarn decreased on account of the curtailed supply of raw cotton and the manufac-

ture of cotton cloth was reduced accordingly. The general consumers were therefore urged to practice economy with regard to consumption of cotton goods on account of the decreased supply of the material.

It was natural that the decrease in the supply of raw cotton should have rendered it impossible for the spinning mills to operate as before, which in turn curtailed the activities of manufacturers of cotton cloth, hosiery and miscellaneous goods using cotton yarn. The inconveniences arising from the reduction in the import of raw cotton required in the execution of the new national policy had to be shared equally by all the industrialists concerned. The sudden reduction in the supply of

cotton goods inevitably led to a rapid rise in the market price of the goods. It was felt desirable as well as necessary to check the rising tendency in price, both from the standpoint of maintaining the export trade in cotton goods at its previous level and of stabilizing the living standard of the people. For the purpose, the quota system was adopted for the distribution of materials among the spinning mills and other enterprisers concerned, the maximum prices of manufactures were fixed, and a commission system was established for dealing in cotton goods with a view to preventing a rise in prices due to speculative activities of middlemen.

These measures were not confined to the cotton industry. They were also adopted in regard to the various industries involving the use of such materials as rubber, timber and wool which were all subjected to the application of the Law Pertaining to Temporary Measures Dealing with Exports and Imports. In other words, the year 1937 witnessed the reform of the entire structure of the fibre industry in Japan. The cotton industry, the wool industry, the rayon industry and the staple fibre industry were all subjected to control in accordance with the Law Pertaining to Temporary Measures Dealing with Exports and Imports.

Going into further details, we shall present a review of the problem of materials first. One of the features of the import trade of Japan concerning raw materials during 1937 was that relating to the difficulties attendant upon the import exchange license. Another feature was that in spite of these difficulties, the actual imports of raw cotton, wool and pulp reached an unprecedentedly enormous amount. An examination of these items, one by one, follows:

Raw Cotton The exchange control ordinance which was promulgated and enforced on January 8th is held responsible, at least partly, for the speculative imports which commenced in the autumn of 1936. The imports of raw cotton during the first 10 months of 1937 reached 13,000,000 piculs valued at ¥18,000,000, as compared with 12,000,000 piculs and ¥670,000,000 for the corresponding period of the preceding year. Following the promulgation of the exchange control ordinance, an outcry was raised by the industrialists concerned about the unrest over the prospects of the material in question. As a result, the Ministry of Commerce and Industry tentatively decided in February

to fix the total amount of imports of raw cotton for 1937 at 14,000,000 piculs. At that time, the curtailment rate for the operation of the spinning mills was 25 per cent. The outbreak of the China Incident increased the urgency of the question of adjusting the international accounts and as the unfavorable balance of the foreign trade reached the neighborhood of ¥700,000,000 at the end of July, the terms of the exchange control ordinance, which had originally been scheduled to expire at the end of the same month, was extended.

In the meantime, the increased stocks of raw cotton in the country resulting from speculative imports became a problem of great importance. An investigation was therefore instituted into the stocks of raw cotton in the month of July by the Ministry of Commerce and Industry, and in October it announced a plan to adjust the relations of the cotton industry under the extraordinary conditions prevailing at the time, calling for the limitation of the imports of raw cotton for 1938 to 12,000,000 piculs with a view to fixing the production of cotton yarn to 300,000 bales a month. The plan also called for economization in the domestic consumption of cotton cloth and the promotion of the export of cotton goods. In the execution of this plan it was decided to impose a raw cotton control fee at the rate of 10 per cent on value of imported cotton with payment of a rebate on exported cotton cloth at the rate of ¥0.012 per square yard.

Simultaneously, the Governmental authorities decided to issue additional import exchange licenses to the extent of ¥50,000,000 by the end of the year. Thus, the question concerning the import of raw cotton appeared to have been settled but it actually was not because the plan of the Ministry of Commerce and Industry failed to be realized in full. The final solution of the question was not reached until the end of November when a new plan was decided upon to adjust the relations of the cotton industry up to February 1938 through the utilization of the stocks of raw cotton in the country and the issuance of additional import exchange licenses to supply the shortage.

The question regarding the amount of imports of raw cotton which would be licensed by the Government for 1938 still remained undecided. It was intimated that the Government authorities were inclined to limit the import exchange license for raw cotton to around ¥35,000,000 monthly but the spin-

ners contended that the management of their spinning mills would break down if the imports of raw cotton should be limited to such a small amount. Accordingly, the question of establishing a raw cotton credit was taken up for serious consideration among the government authorities and the industrialists concerned. Meanwhile, the Japan Cotton Spinners' Association and the Raw Cotton Trade Association, both of which had long been at variance with each other, were restored to friendly relations, facilitating the adoption of the quota system for the distribution of raw cotton and the adoption of the commission principle among dealers in raw cotton.

Wool The imports of wool during the first 10 months of 1937 amounted to 1,860,000 piculs valued at ¥287,000,000, as compared with 1,500,000 piculs and ¥183,000,000 for the corresponding period of the preceding year. Toward the end of the year, however, a decreasing tendency appeared. Although an agreement based on barter system was in force between Japan and Australia, calling upon Japan to import a total of 800,000 bags of wool from Australia between January, 1937, and June, 1938, in return for the export of cotton yarn, cotton cloth, rayon yarn and rayon cloth, the opinion was expressed that the actual imports of wool might fall short of the stipulated amount.

The rapid decrease in the imports of wool, as in those of cotton, made the problem of distribution of the material among the industrialists concerned extremely difficult. The wool industrialists' association met in July and decided upon a system of quotas for its member companies for the period between September, 1937, and August, 1938.

Pulp While the consideration of the question concerning raw cotton and wool during 1937 centered upon the measures to cope with the limitation of imports, the consideration of the question concerning pulp centred upon the problem of increasing the domestic output of the material. The production of staple fibre, which amounted to 150 to 160 metric tons daily in the spring, was increased to 250 metric tons toward the end of the year.

In view of the enactment of law requiring the mixture of staple fibre with woollen yarn and cotton yarn, the domestic production of pulp became an increasingly urgent problem. It was therefore decided to increase the production of pulp wood and to reform the forestry administration in conformity with the new requirements. The

imports of pulp for the manufacture of paper and rayon during the first 10 months of 1937 amounted to 6,800,000 piculs, as against 3,800,000 piculs for the corresponding period of 1936 and 4,500,000 piculs for the same period in 1936. The domestic production of pulp, however, failed to increase in proportion, particularly the pulp used in the manufacture of rayon showed little increase.

The Ministry of Commerce and Industry worked out a plan to increase the domestic production of pulp to 1,370,000 metric tons in 1938 and further to 1,800,000 metric tons through the execution of a five-year programme. In regard to the increase of pulp wood, however, the attitudes of the various Ministries concerned were yet undecided. Meanwhile, the pulp circles witnessed the creation of an import control association similar to that governing the cotton and wool industries.

So much for the imports and domestic production of the various materials. Now we shall turn to the conditions of the various industrial circles.

Cotton Industrial Circles The business conditions of cotton spinning companies during the first half of 1937 were remarkably good owing to the boom prevailing since the autumn of the preceding year. The average percentage of the profits of the member companies of the Japan Cotton Spinners' Association for the term was 34 per cent as against 27.1 per cent for the first half and 28.2 per cent for the second half of the preceding year.

While the continued high quotations of cotton yarn and cotton cloth caused a fear in the first half of the year that a reaction might occur in the second half, the exporters of cotton cloth concentrated their efforts on maintaining their trade at the level which it had attained in the first half of the year. These efforts were evidenced in the American-Japanese cotton negotiations which were commenced on the occasion of the visit of the American cotton mission to this country and the subsequent negotiations of a similar nature with Burma, India and the Dutch East Indies. The amalgamation of the cotton export unions which had been separated from each other according to markets and varieties of products dealt with, also reflected the move launched by the exporters.

The production of cotton yarn, which amounted to an average of 300,000 bales monthly during 1936, was increased to 335,000 bales during 1937, representing a gain of over 10 per cent. According

to the plan devised by the Ministry of Commerce and Industry for the adjustment of conditions in the cotton industry in conformity with the war situation prevailing in October, the curtailment rate for the member companies of the Japan Cotton Spinners' Association was raised remarkably but still no considerable decrease occurred in the production of cotton yarn. This is due to the ardent efforts of the various cotton yarn producing companies to increase their production in the face of the anticipated adoption of a quota system based on the actual rate of production in the past.

The following is a table showing a comparison between the changes in the curtailment rate and the production of cotton yarn:

	Curtailment Rate	Production of Cotton Yarn(bales)
1937		
January	25.0	326,126,000
February	"	329,749,000
March	"	325,890,000
April	27.4	337,804,000
May	"	334,941,000
June	"	341,460,000
July	25.0	338,387,000
August	"	339,796,000
September	"	349,845,000
October	32.4	336,979,000
November	"	332,597,000
December	36.2	—
1936		
January	"	—

The exports of cotton cloth during the period beginning January, 1937, to the 10th of December amounted to 2,470,000,000 square yards valued at ¥539,000,000. These figures represented a decrease of about 1.3 per cent in quantity and an increase of 20 per cent in value in comparison with similar figures for the corresponding period of the preceding year. In the forecasts for 1938, some expressed the view that a considerable decrease might be recorded if there should be no change in the policy of the Government toward the cotton industry. This question engaged the attention of the government authorities as well as the civilian circles concerned because of the important bearing it has upon the problem of fixing the highest prices of cotton yarn and cotton cloth.

In connection with the anticipated promulgation of the ordinance enforcing the mixture of cotton yarn with

staple fibre for domestic consumption, the Japan Cotton Spinners' Association decided to fix the rate of mixture at one-third. A great change in the cotton circles incidental to the control of the cotton industry was the enlargement of the Raw Cotton Association. The long-outstanding differences between this association and the Japan Cotton Spinners' Association were straightened out favourably for the former by the settlement of the terms of co-operation between the association and the Ministry of Commerce and Industry in regard to the control over the distribution of cotton yarn for the manufacture of cotton cloth for domestic consumption. Under the control system agreed upon the dealers in cotton yarn were made to function as brokers for commission only. By the end of the year, the control of cotton industry was almost perfected, with a further strengthening being expected in 1938.

Wool Industrial Circles The developments in the wool industrial circles during 1937, as in the case of cotton industrial circles, were marked by the restrictions imposed upon imports of raw wool and the necessity of mixing woollen yarn with staple fibre and other substitute fibres. The opposition between the Federation of Wool Industrialists' Associations and the Raw Wool Association was also liquidated in the same manner that the differences between the Japan Cotton Spinners' Association and the Raw Cotton Association were straightened out. Simultaneously with the promulgation, in October, of the ordinance making the mixture of wool and staple fibre compulsory, it was decided to extend the influence of the Federation of Wool Industrialists' Associations, and accordingly, the wool industrial circles were divided into two sections, namely, the woollen yarn section and the woollen textile section.

With the Raw Wool Association as its centre, the woollen yarn section is controlled by the combed woollen yarn union and the spun woollen yarn union both of which take charge of the enforcement of the control. The woollen textile section is placed under the control of the Federation of Wool Industrialists' Associations. Thus, the control over production and distribution was nearly perfected restricting the influence of the middlemen or dealers in woollen yarn.

Rayon and Staple Fibre Industrial Circles Staple fibre became the favourite of the time as the most suitable sub-

stitute fibre on account of the need for effecting a reform in the productive structures of the cotton and the wool industry necessitated by the shortage in the supply of cotton and wool. The Government undertook to encourage the development of the staple fibre industry from the standpoint of the national policy but here again there arose the question concerning the shortage of the material. After the imposition of restrictions regarding the imports of pulp, the Rayon Association, the Staple Fibre Association and the pulp importers jointly organized the Pulp Import Association.

At the same time, the question of reforming the productive structure of the industry was brought up for discussion. The opposition between the Staple Fibre Association and the Artificial Fibre Industrialists' Association which had been an obstacle to the development of the fibre industry, was liquidated and four associations were created to take charge of the control of the departments of production, spinning, weaving and manufacturing respectively. These four associations were unified through the creation of the Federation of Staple Fibre Associations which was to supervise the functions of the individual associations.

The Government tentatively decided to fix the amount of the imports of pulp for the manufacture of staple fibre during 1938 at 158,000 metric tons. If the system of compulsory mixing of staple fibre with cotton yarn and woolen yarn should operate in real earnest, the productive capacity of the staple fibre industry will have to be doubled.

In comparison with the remarkable advance of the staple fibre industry, it must be said that the rayon circles were very dull during 1937. On account of the feeble demand for rayon goods, both at home and abroad, the

Rayon Association repeatedly reduced the production quota, and was finally forced to abandon its time-honoured system of production quota according to articles. In August, the system of joint custody of 15 to 20 per cent of the products was adopted and in November, a decision had to be reached to enforce a curtailment at the high rate of nearly 60 per cent.

Cotton Industry in 1937

The control imposed on imports of raw cotton necessitated a curtailment of over 30 per cent in spinning industry during the last quarter of 1937, and as a result, the exports of cotton tissues could not keep the 2,700,000,000 square yard mark which had been attained in the previous two years. But the year 1937 was a memorable year for the industry on account of the conclusion of the American-Japanese and Indian-Japanese agreements. The problem of harmonizing the limitation of cotton imports and the expansion of cotton tissues was left over to be solved later.

Imports of Cotton The imports of cotton were limited to ¥50,000,000 for the 3 months between September and November, 1937. But as official licenses for imports were delayed due to the pressure of imports of materials for heavy industries, only ¥15,000,000 worth of cotton was actually imported by the end of November. The shortage of supply was keenly felt and as the result of an agreement between the cotton spinners and the Governmental authorities the remaining ¥32,000,000 was made available for the following two months, i.e. ¥12,000,000 for the first half of December, ¥10,000,000 for the second half of the same month, and the last ¥10,000,000 for the first half of January, 1938.

IMPORTS OF COTTON IN 1937

(In 1,000 piculs and ¥1,000)

From	1936		1937	
	Quantity	Value	Quantity	Value
China	464	22,778	401	23,229
British India	6,727	315,061	7,016	363,625
Dutch East Indies	37	701	66	1,173
Turkey	49	2,439	5	291
U. S. A.	5,929	372,415	4,224	306,366
Egypt	445	36,415	670	58,759
Kenya, Uganda	397	27,500	276	21,529
Others and Total	16,211	850,416	3,765	851,163

Curtailment of Operation Agreement on the curtailment of spindle operation has been repeated 11 times since the Meiji Era, and the rates given in the following table are as contained in the 11th agreement among the cotton spinners. It was agreed that as from January 1, 1937, for a period of two years, the number of spindles was not to be increased beyond 30 per cent of the number installed by the end of 1936; that is, in actual application, no more than 20,000 spindles should be installed in a mill which had less than 100,000 spindles on the date of agreement; no more than 20 per cent or a maximum number of 30,000 spindles in a mill which had less than 200,000 spindles; 15 per cent or a maximum of 40,000 spindles in a mill which had less than 500,000 spindles; and 8 per cent or a maximum of 50,000 spindles in a mill which had over 500,000,000 spindles.

THE RATE OF CURTAILMENT IN SPINNING

From the 1st of	Rate agreed	Actual Rate
April, 1931	30.8	30.8
July, 1931	18.0	25.2
November, 1931	23.8	30.8
October, 1932	28.8	35.8
January, 1933	20.0	27.2
July, 1934	15.0	22.6
October, 1934	11.2	18.0
April, 1935	16.2	23.0
July, 1935	20.0	27.6
September, 1935	22.2	29.8
November, 1935	26.2	33.8
January, 1937	25.0	32.6
April, 1937	27.4	35.0
July, 1937	25.0	32.6
October, 1937	32.4	40.0
January, 1938	36.2	43.8

Within the limit imposed, the number of spindles increased with a corresponding increase in the production and export of cotton yarn. The total production amounted to 3,968,269 bales, an increase of 361,073 bales over the previous year, while the exports amounted to 128,908 bales an increase of 18,873 bales.

Use of Spindles for Artificial Fibre Despite the prohibition against the use of idle spindles for spinning artificial fibre yarn, some 280,000 spindles were secretly operated for this purpose. With the increase in the number of idle spindles to 3,160,000 in June, 1937, on account of import control, the Japan Cotton Spinners' Association changed its policy and permitted, with certain

restrictions, the use of idle spindles for spinning artificial fibre yarn, the demand for which is ever on the increase.

Extension to Korea Since the spring of 1937 Japanese cotton spinners have been extending their business to Korea, many large-scale factories being constructed there by such leading spinners as the Kanegafuchi, Dai Nippon, Toyo Cotton and Kurashiki Cotton. It is expected that these factories, upon their completion, will produce enough cotton textiles to satisfy the entire demand of Korea and be able to export their products to Manchoukuo and North China as well, and will be run on a highly efficient system, with cheap production cost, and with their supply of raw cotton obtained directly from Manchoukuo and North China.

Business Results According to the report of the Japan Cotton Spinners' Association on the business results of 67 member companies for the first half of 1937, the authorized capital increased by ¥27,000,000, the total capitalization approaching 700 million yen, and the shares and loans increased by ¥20,000,000 to be invested in expanding the scope of the factories, extending business to North China, and developing side lines. Net profit, reserves, and the average rate of dividend all increased, 30 of the 67 companies being able to increase or maintain their dividend rate, while only 3 of the companies were forced to reduce theirs.

BUSINESS RESULTS OF COTTON SPINNING COMPANIES IN JAPAN PROPER

(67 Member Companies of the Japan Cotton Spinners' Association)

(In ¥1,000)

	Second Half, 1936	First Half, 1937
Authorized capital	656,752	686,102
Paid-up capital	466,492	512,988
Reserves	280,629	287,603
Debentures and debts	184,562	205,621
Fixed assets	699,381	732,392
Repayments	20,287	31,264
Balance brought forward	66,968	62,222
Net profits	36,828	47,081
Dividends	25,878	31,114
Reserved	6,075	9,117
Balance	73,843	69,072
Rate of dividend	11.2	12.4

Compulsory Mixture of Artificial Fibre If the nation's exports of cotton goods

should be maintained at their normal level inspite of the decreased import of raw cotton, the only possible course open to the country was to economize the domestic consumption of the material, and accordingly, the Government issued regulations for a compulsory mixture of staple fibre with raw cotton in spinning for domestic consumption. The law, enforced on January 1, 1938, specifies that all cotton yarn, cloth and knitted goods produced for domestic consumption contain not less than 30 per cent of staple fibre, and that these goods must be specially marked to be distinguished from the pure cotton goods which are manufactured for export.

Loss in China The loss sustained by the 21 Japanese spinning mills in China, in connection with the Sino-Japanese hostilities was estimated at ¥156,890,000, of which the loss to the 9 mills in Tsingtao accounted for ¥127,520,000, the loss to the 9 mills in Shanghai for ¥29,110,000 and that to the 3 mills in Tientsin for ¥51,000. The conditions of the cotton mills in Tientsin returned to normal in March, 1938, those in Shanghai are still recovering, while the Tsingtao mills which had sustained the most serious damage will require to be replaced by new equipment to a large extent.

Exploitation of Cotton Field in North China The average yearly output of cotton in China is estimated at 10,000,000 piculs (a picul=133.33 lbs.), of which 3,500,000 piculs are cropped in North

China, although the 1937 crop was much reduced according to the second forecast on account of the warfare and the heavy rainfalls. But plans are being drawn out by Japanese companies for the future exploitation of the area for a greater supply of better quality cotton.

Exports of Cotton Cloth The rate of expansion of cotton goods trade in 1937 dwindled because of the difficulty of gaining new markets abroad and the rise in price, and the quantity of the cotton textile exports decreased by 65,856,000 square yards, the total being 2,644,029,000 square yards, although the total value which amounted to ¥573,065,000 had shown an increase of ¥89,474,000 as compared with the previous year. The countries which bought most were Siam, Dutch East Indies, North and South America, the Philippines, the Straits Settlements, Egypt, Sudan, Kenya and Uganda, while those which imported smaller quantities were Manchoukuo, Kwantung Leased Territory, British India, several countries in Europe, and French Molluoca. According to the report of the Cotton Goods Manufacturers Association on the quantity of exports by kinds, bleached cotton tissues increased by 29.8 per cent and dyed cotton yarn 0.6 per cent, while gray cotton tissues decreased by 16.6 per cent, printed ones 5.1 per cent. The average price of cotton tissues rose from ¥0.182 per square yard in 1935 and ¥0.178 in 1936 to ¥0.217 in 1937.

EXPORTS OF COTTON TISSUES BY COUNTRIES IN 1937

(Compiled by the Cotton Goods Manufacturers' Association)

(In 1,000 sq. yards and ¥1,000)

	1937		Increase (+) or Decrease (-) as compared with the previous year	
	Quantity	Value	Quantity	Value
China	45,508	11,573	+24.4	+48.7
Manchoukuo	208,394	54,671	- 5.8	+17.6
Kwantung L. T.	116,273	29,108	- 6.9	+ 5.9
Hongkong	40,394	9,508	-51.3	-36.2
Philippines	55,621	12,771	+15.1	+50.6
Straits Settlements	53,344	12,734	+11.0	+38.0
Dutch East Indies	430,480	84,777	+22.8	+52.7
British India	326,551	62,993	-32.3	-13.9
European countries	115,064	24,703	- 6.5	+16.1
North America	129,650	23,838	+73.7	+69.5
Central America	64,264	13,590	- 4.7	+17.6
South America	249,647	57,181	+39.2	+71.2
Africa	439,830	96,502	- 4.7	+12.9
Australia	71,214	18,257	+ 2.5	+34.1
Others	314,519	66,656	- 6.2	+ 9.6
Total	2,661,751	578,887	- 1.7	+19.7

Note:—These figures are somewhat different from those of the Finance Ministry.

According to the figures compiled by the above-mentioned Association, Japan occupies the first place in supplying cotton goods to the world, surpassing Great Britain by 739,000,000 square yards or 38.5 per cent in 1937.

Diplomatic Negotiations The year 1937 witnessed many diplomatic conferences between Japan and foreign countries on cotton trade. Japan and the United States arrived at an understanding in January, 1937; the second pact on cotton and cotton goods trade was concluded in March between Japan and British India; the commercial negotiations between Japan and Chile came to a satisfactory conclusion in May; the second conference between Japan and Dutch East Indies which was begun in June, 1937 arrived at an amicable settlement in February, 1938; and the negotiations for a second Japan-Egyptian agreement which were begun in the fall of 1937 are making satisfactory progress. The negotiations with Great Britain on the export of cotton knitted tissues which were begun in 1937 resulted in an agreement to last for three years, the settlement having been arrived at in February, 1938. The

understanding on cotton goods exports to Peru was extended temporarily in March, 1937; and the terms of the commercial treaty between Japan and Australia were decided upon in July, 1937. But the revised quota system pertaining to cotton tissues adopted by the Straits Settlements in January, 1938, favouring British goods has dealt a severe blow to Japanese business. Otokichi Shoji of the Japan Cotton Spinners' Association who was sent to China in March, 1937 as an economic delegate met several representative Chinese businessmen and had several talks with them on the matter of improving Chinese cotton and co-operation for mutual benefit. Gengo Kodera, president of the Dai-Nippon Cotton Spinning Company, made visits to American and European countries as an economic delegate. Advisors were sent to the preliminary parley of the International Fibre Industry Council held at Washington in April and a later meeting of the Council at Geneva in July, 1937. The 40 working hour system was decided upon with a majority vote at the Council, but Japan expressed itself against the move.

SPINNERS' CAPITAL AND EQUIPMENT

At the end of	Cos.	Paid Cap. (000s)	Reserves (000s)	Mills	Ring Spindles	Mule Spindles	Doubling Spindles	Looms
1918	43	138,495	92,426	177	3,175,768	51,910	384,872	40,391
1919	54	165,758	139,074	190	3,435,932	52,330	410,690	44,401
1920	56	276,536	165,697	198	3,761,250	52,330	466,460	50,583
1921	61	295,648	182,041	217	4,116,616	44,510	533,384	54,994
1922	64	317,148	202,774	235	4,472,112	45,500	602,032	60,765
1923	70	376,273	217,408	241	4,422,428	14,370	510,031	64,460
1924	69	398,163	219,043	247	5,100,056	25,150	685,995	68,579
1925	64	382,715	223,531	243	5,413,094	34,090	759,632	73,381
1926	64	391,305	231,149	247	5,644,772	35,080	789,688	77,043
1927	64	391,551	238,367	257	6,079,272	36,994	787,490	78,352
1928	70	419,792	249,679	259	6,425,500	41,674	804,520	81,209
1929	70	429,415	259,757	258	6,795,502	41,014	808,324	77,898
1930	74	425,346	252,095	263	7,171,527	42,474	803,094	79,466
1931	72	398,655	240,828	263	7,498,152	36,994	801,594	77,782
1932	71	397,675	245,940	265	7,929,530	35,320	810,492	79,277
1933	69	403,899	255,398	268	8,608,608	35,320	842,808	86,343
1934	61	438,573	273,315	275	9,495,254	35,320	868,440	91,146
1935	74	440,255	276,898	276	10,197,124	35,320	868,304	89,325
1936(June)75		455,640	278,307	285	10,989,900	—	—	98,000
1937(")74		512,988	287,603	282	12,190,800	—	—	104,600

Note: In 1923 and in the years following, all figures include spinners not members of the Japan Cotton Spinners' Association. It must be noted that the looms include only those which are owned by spinners, not embracing those in mills which have no spinning equipment.

Source: The report of the Japan Cotton Spinners' Association.

RAW COTTON IMPORTS

(Compiled by the Finance Ministry)
(In piculs and ¥1,000)

	1935		1936		1937	
	Volume	Value	Volume	Value	Volume	Value
U. S. A.	5,758,430	371,952	5,928,746	372,415	4,224,000	306,338
British India	5,211,039	259,037	6,716,944	315,061	7,016,000	363,635
Egypt	536,917	43,009	445,463	36,415	570,000	58,759
China	427,410	20,705	463,944	22,778	401,000	23,609
Others	349,943	19,555	1,646,071	103,782	1,454,000	98,772
Total	12,283,739	714,262	15,211,168	850,452	13,765,000	851,163

CONSUMPTION OF COTTON

(Compiled by the Japan Cotton Spinners' Association)
(In kilogrammes)

	Indian	American	Chinese	Egyptian	African
1923	293,759,329	133,390,616	11,626,586	9,963,244	—
1924	253,786,155	126,988,661	26,499,803	11,771,141	4,508,145
1925	288,139,808	171,020,929	21,257,723	11,770,616	3,847,395
1926	299,095,073	218,908,958	8,980,391	13,690,931	5,909,891
1927	248,207,074	252,941,265	7,128,701	14,012,775	3,723,784
1928	231,727,684	232,100,809	27,636,750	12,748,245	3,989,411
1929	291,836,453	256,534,391	13,156,298	13,905,904	5,572,560
1930	284,672,288	212,634,672	5,190,675	11,585,719	4,162,196
1931	263,497,489	255,348,623	1,179,784	14,721,146	1,132,088
1932	150,411,008	412,251,821	920,678	16,970,179	74,254
1933	209,200,192	394,741,935	3,563,944	18,438,758	5,023,702
1934	276,035,861	388,724,040	5,173,496	24,023,621	8,429,535

(In piculs)

	Indian	American	Chinese	Egyptian	African
1935	5,088,775	6,341,538	32,992	513,186	66,647
1936	5,467,371	5,209,641	159,670	478,053	283,351
1937	—	—	—	—	—

Annamese

	Annamese	Chosenese	Others	Total
1923	1,133,771	5,424,405	3,568,234	458,866,185
1924	657,799	9,199,661	2,644,800	436,056,165
1925	1,225,313	8,581,939	4,401,705	510,245,426
1926	455,123	5,630,824	3,943,530	556,614,720
1927	1,331,385	4,395,866	3,363,323	535,104,173
1928	754,478	5,013,551	3,206,689	517,177,616
1929	259,620	6,747,870	3,293,085	591,306,180
1930	876,334	9,194,138	2,871,536	531,187,558
1931	552,548	6,389,591	2,194,039	545,015,308
1932	218,708	2,292,566	3,259,450	586,398,664
1933	260,933	7,556,580	4,909,466	643,695,510
1934	583,740	7,306,260	10,634,134	720,910,987

(In piculs)

	Iranian	Persian	Perniran	Brazilian	Miscellaneous	Total		
1935	2,168	167,619	18,914	24,358	60,837	7,576	96,838	12,520,056
1936	2,529	231,676	22,969	8,029	99,934	374,883	210,536	12,670,325
1937	—	—	—	—	—	—	—	14,031,500

PRODUCTION, CONSUMPTION, IMPORTS AND EXPORTS OF COTTON YARNS SINCE 1932

(In bales)

Year	Domestic Output	Imports	Exports	Exported as Cotton Tissues	Domestic Consumption
1932	2,810,437	28,586	89,604	1,437,540	1,301,877
1933	3,099,856	58,966	48,307	1,491,656	1,632,994
1934	3,462,442	54,517	64,844	1,866,542	1,585,789
1935	3,559,051	17,514	95,583	1,940,400	1,545,425
1936	3,607,196	14,119	110,833	1,921,920	1,591,162
1937	3,968,269	10,877	128,908	1,690,690	1,949,981

PRODUCTION OF COTTON YARN IN 1936

(Compiled by the Japan Cotton Spinners' Association)

	Total No. of Looms	Working Looms	Rate of Resting Looms	Consumption of Raw Cotton (In Kan)	Production of Cotton Yarn (In bales)	Operatives Male	Operatives Female
January	10,296,528	8,137,277	26.2	15,703,434	281,565.5	18,168	126,620
February	10,345,528	8,192,876	26.2	16,344,044	295,402.0	18,077	126,399
March	10,397,704	8,235,838	26.6	16,395,321	293,818.5	17,909	127,808
April	10,440,348	8,258,535	26.2	16,858,762	303,850.5	17,846	132,653
May	10,494,304	8,382,596	26.2	16,852,751	303,981.0	17,918	136,520
June	10,519,980	8,508,406	26.2	17,492,032	308,585.5	18,020	137,679
July	10,688,708	8,409,607	26.2	16,471,037	294,562.0	17,791	135,465
August	10,701,548	8,406,601	26.2	16,383,015	291,787.5	17,811	132,781
September	10,738,840	8,327,445	26.2	16,283,742	290,433.5	17,673	133,263
October	10,861,708	8,424,128	26.2	16,705,686	298,387.5	17,811	133,272
November	10,991,660	8,633,349	26.2	17,938,031	318,438.5	17,947	134,572
December	11,192,072	8,787,633	26.2	18,424,395	326,646.5	18,427	137,971
Monthly Average	10,639,077	8,392,858	26.2	16,821,021	300,621.5	17,950	132,917
Monthly Average in 1935	9,736,087	8,197,422	18.25	16,591,612	296,736.0	18,640	133,899

PRODUCTION OF COTTON YARN IN 1937

	No. of Looms (In 1,000)	Working Looms (In 1,000)	Consumption of Raw Cotton (In 1,000 Kan)	Production of Cotton Yarn (In bales)
January	11,853	9,055	18,217	326,170
February	11,850	9,111	18,364	329,750
March	12,844	9,124	18,105	325,875
April	11,839	8,975	18,752	337,824
May	11,841	9,002	18,609	334,940
June	11,863	9,070	19,193	341,461
July	11,879	9,280	18,958	338,371
August	11,893	9,260	19,123	339,672
September	12,031	9,296	19,699	349,845
October	12,075	8,784	18,810	336,979
November	12,116	8,646	18,407	332,598
December	12,165	8,063	18,267	274,784
Monthly Average	11,937	8,972	(Total) 224,504	3,968,269

COTTON CLOTH PRODUCTION DATA IN MEMBER MILLS

Terms	Working Looms	Output Yards (000s)	Yds. per Day per Loom	Yarn Used Pounds (000s)	Waste Pounds (000s)	Operatives (Daily average) Men	Operatives (Daily average) Women
1930a	67,571	578,907	62.97	160,941	1,553	8,186	31,810
1930b	62,767	629,516	57.08	135,651	1,239	6,607	24,103
1931a	63,817	682,557	62.01	146,313	1,360	5,988	23,047
1931b	64,967	722,111	62.88	154,919	1,380	5,636	23,000
1932a	66,725	749,279	64.74	159,417	1,447	5,425	23,797
1932b	69,332	783,572	63.16	166,491	1,491	5,334	26,234
1933a	74,835	840,462	64.80	184,201	1,593	5,301	28,876
1933b	73,098	833,419	65.50	178,100	1,558	5,291	29,150
1934a	78,850	877,820	65.37	189,329	1,625	5,207	30,319
1934b	80,410	916,025	64.66	195,631	1,703	5,282	31,099
1935a	82,515	943,578	65.05	200,736	1,726	5,141	32,718
1935b	82,279	899,893	61.36	191,905	1,802	4,909	31,608
1936a	85,973	1,602,400	—	—	—	4,788	33,671
1936b	87,174	899,413	—	193,860	2,000	4,846	34,751
1937a	89,905	952,876	—	206,631	2,188	5,126	37,827
1937b	90,489	937,678	—	200,357	2,159	5,043	39,177

VALUE OF COTTON CLOTH PRODUCTION IN JAPAN PROPER

(Prepared by the Ministry of Commerce and Industry)

Year	Value (In ¥1,000)	Year	Value (In ¥1,000)
1925	774,372	1933	704,853
1926	743,315	1934	816,561
1927	725,419	1935	875,793
1928	784,634	1936	865,001
1929	736,534	1937	1,038,768
1930	498,021		
1931	423,023		
1932	531,915		

Note: Figures include production by small factories which employ less than 2 persons.

SUPPLY AND DEMAND OF COTTON CLOTH

	Total Production (Broad Weaves)	Production		Consumption	
		Production by Spinning Companies (In 1,000 yards)	Production in Weaving Districts	Exports (In 1,000 sq. yards)	Home Consumption (In 1,000 yards)
1929	2,647,524	1,538,249	1,109,275	1,790,560	856,264
1930	2,615,411	1,388,423	1,226,988	1,571,825	1,043,586
1931	2,840,161	1,404,668	1,435,493	1,413,780	1,426,381
1932	3,100,130	1,532,850	1,567,280	2,031,722	1,068,408
1933	3,610,577	1,713,878	1,896,699	2,090,228	1,522,138
1934	4,057,979	1,793,843	2,264,136	2,568,168	1,606,079
1935	4,112,111	1,843,471	2,268,640	2,711,352	1,400,750
1936	3,973,479	1,799,033	1,780,972	2,705,083	1,269,692
1937	4,212,825	1,890,554	2,322,262	2,632,661	1,577,175

EXPORTS OF COTTON CLOTH

(In 1,000 sq. yards)

	1932	1933	1934	1935	1936	1937
Manchoukuo	8,971	91,911	170,430	161,283	223,775	212,208
China	193,623	113,248	59,443	56,046	37,329	45,068
Kwantung L. T.	88,838	86,921	83,529	68,087	127,097	117,607
Hong-Kong	23,406	28,692	36,292	49,384	84,656	39,747
British India	644,685	451,791	451,640	561,510	479,076	351,190
Straits Settlements	82,228	95,769	90,989	47,359	48,208	51,784
Dutch East Indies	352,234	422,755	440,870	372,242	351,718	434,390
Philippines	21,410	34,918	75,709	87,481	44,314	44,173
Slam	24,458	39,826	60,555	70,012	72,186	71,469
Turkey	41,529	11,157	7,835	19,480	26,521	14,449
U. S. A.	1,646	7,485	17,370	48,336	73,444	123,775
Chile	1,263	6,534	31,737	26,838	32,845	36,402
Argentina	22,461	34,942	66,365	103,377	82,169	131,008
Uruguay	396	2,611	9,559	4,664	10,938	20,944
Egypt	195,435	210,349	233,686	163,737	101,219	49,685
Union of South Africa	36,316	26,101	16,173	26,239	29,713	32,809
Australia	35,992	54,999	74,547	86,634	20,059	52,528
New Zealand	1,238	2,622	2,835	5,446	12,287	11,208
Hawaii	1,152	931	903	1,205	1,775	2,325
Others and Total	2,031,722	2,090,230	2,577,237	2,725,109	2,709,804	2,644,028
Value (¥1,000)	288,713	383,215	492,351	496,097	483,592	573,065

Silk Textile Industry

Silk Weaving Districts As early as the days of the Emperor Suinin, about 1,960 years ago, weaving was already carried on, on a fairly large scale, under encouragement of the Imperial Court. During the Yedo Age the weaving in-

dustry made marked development as one of the most important domestic industries. The Ryomo district, which is one of the chief weaving districts for silk textiles for domestic use, has been known as a very prosperous weaving centre for centuries. This district is in Gumma and Tochigi prefectures and includes great weaving centres such as Ashikaga, Kiryu, Isézaki, Sano and Tatebayashi. The district may be likened to Paterson, New Jersey, U.S.A.

Another important weaving district is Fukul, followed by Kyoto, Ishikawa, Niigata and Tokyo in the order named. Among silk weaves of Japanese manufacture habutae, taffeta, popline, chiffon, pongee, fuji silk, crepe, etc. are well-known abroad. In addition to these, however, there are many varieties, which are used by the Japanese at home, but these weaves are generally of narrow width, omeshi, ro, sha, meimon, nishijin, etc.

The Industry in 1936 Continued prosperity featured the silk weaving industry in Japan in 1936. Exports again

increased. Though British-India and some countries in Europe tried to bar imports of Japanese silk weaves, the depreciation in currency enabled Japan to counteract such moves successfully, for her exports experienced an unprecedented boom.

In 1936 the number of silk weaving factories in Japan proper was 72,599, an increase of 289 over the previous year, with 369,319 looms and 310,359 operatives, an increase of 34,474 and 19,447 respectively.

Production of Silk Weaves Owing to the increase in consumption both at home and abroad production showed gains. Total production in 1936 was valued at ¥663,133,579, a gain of ¥30,200,391 over the previous year. Of the total, crepes amounted to ¥192,220,583 and showed an increase of ¥8,010,690 over 1935; habutae totalled ¥48,953,625, an increase of ¥3,699,648; and fuji silk ¥22,718,241 with a loss of ¥5,086,509. The industry as a whole profited through the low price of silk. Production of silk textiles since 1927 follows:

PRODUCTION OF SILK TEXTILES

(Compiled by the Ministry of Commerce and Industry)

Year	Broad Weaves					
	Crêpes and Kabe-ori		Habutae		Pongee	
	Qt'y in 1,000 metres	Value in ¥1,000	Qt'y in 1,000 metres	Value in ¥1,000	Qt'y in 1,000 metres	Value in ¥1,000
1927	23,426	32,434	61,957	40,385	21,963	14,683
1928	31,385	43,116	60,392	42,965	29,809	16,606
1929	30,511	42,244	64,244	39,156	26,834	12,564
1930	32,233	33,606	45,545	21,434	20,665	7,091
1931	34,646	27,964	31,213	11,907	33,071	9,655
1932	45,812	33,546	36,060	13,273	32,550	11,164
1933	85,385	66,105	48,735	19,281	35,636	12,699
1934	124,950	73,721	109,110	27,174	37,109	10,790
1935	179,348	82,973	81,858	21,888	22,807	6,838
1936	231,376	91,974	127,171	31,998	15,258	4,634

Year	Fuji silk		Satin		Others & total Value in ¥1,000
	Qt'y in 1,000 metres	Value in ¥1,000	Qt'y in 1,000 metres	Value in ¥1,000	
1927	45,128	34,986	9,665	12,703	159,893
1928	56,050	40,726	10,229	13,388	181,074
1929	60,872	40,085	14,104	15,896	194,288
1930	51,320	26,862	21,581	16,653	150,657
1931	51,551	24,851	25,490	14,268	137,251
1932	56,619	28,896	45,799	20,040	175,640
1933	65,945	33,216	45,527	21,904	235,902
1934	59,439	31,155	74,577	26,546	273,097
1935	50,866	27,804	91,087	26,790	283,420
1936	41,517	22,718	89,556	27,361	311,842

Narrow Weaves

Year	Omeshi		Crêpes and Kabé		Habutaé, etc.	
	Qt'y in 1,000 tan	Value in ¥1,000	Qt'y in 1,000 tan	Value in ¥1,000	Qt'y in 1,000 tan	Value in ¥1,000
1927	891	16,751	4,537	54,457	3,720	31,159
1928	1,082	19,988	6,388	69,782	4,074	35,103
1929	1,020	18,003	5,236	55,607	3,077	25,321
1930	1,208	17,954	7,248	59,511	3,986	24,158
1931	1,783	22,577	10,659	67,670	3,701	20,473
1932	2,102	21,195	9,611	60,982	3,495	20,241
1933	1,493	15,809	10,979	69,207	2,911	17,353
1934	1,783	17,398	15,199	93,761	3,748	19,329
1935	2,095	19,975	17,865	101,236	4,688	23,363
1936	2,529	17,945	19,321	100,246	3,170	16,935

Year	Ro and Sha		Meisen, etc.		Others & Total Value in ¥1,000
	Qt'y in 1,000 tan	Value in ¥1,000	Qt'y in 1,000 tan	Value in ¥1,000	
1927	1,129	11,889	7,419	57,861	215,030
1928	1,197	13,021	10,229	75,353	260,714
1929	1,321	13,353	12,386	71,003	221,026
1930	1,368	11,111	14,432	68,500	269,774
1931	1,347	8,352	13,526	57,017	207,898
1932	2,139	12,231	12,601	48,132	190,809
1933	1,894	11,319	12,117	46,096	197,349
1934	2,717	12,868	12,735	49,641	234,353
1935	2,567	12,367	11,205	44,907	242,750
1936	3,175	13,279	10,639	42,525	236,896

Year	Special Weaves	Total of Silk Textiles	Silk-Cotton Mixtures	Grand total
	Value in ¥1,000	Value in ¥1,000	Value in ¥1,000	Value in ¥1,000
1927	36,180	411,104	58,305	489,408
1928	40,893	482,682	57,986	540,569
1929	30,234	445,549	48,301	493,850
1930	31,175	391,606	33,532	425,138
1931	31,599	376,749	30,107	406,857
1932	33,351	407,860	31,159	439,019
1933	30,931	464,183	36,912	501,095
1934	47,091	554,542	46,328	600,870
1935	53,053	579,223	53,709	632,933
1936	53,101	601,940	61,192	663,133

Note: Figures given here show products by all mills, regardless of the size of mills, or the number of operatives employed.

EXPORTS OF SILK TEXTILES

Kind	1932 1933 1934 1935 1936 1937					
	quantity in 1,000 kin	value in ¥1,000	quantity in 1,000 sq.-yds.	value in ¥1,000	quantity in 1,000 sq.-yds.	value in ¥1,000
Habutaé	7,078	663	911	20,840	26,664	39,318
Satin	3,322	2,988	7,215	6,279	—	—
Fuji silk	1,822	1,744	4,442	4,043	3,281	1,953
Crêpes	30,333	32,449	32,267	22,973	23,421	23,101
Pongee	15,014	17,179	18,578	13,670	13,573	14,902
Others and Total	23,785	28,844	42,953	50,476	—	—
	18,893	25,189	34,546	38,827	31,274	30,831
	24,222	31,075	22,011	17,093	—	—
	6,520	9,668	6,732	5,085	2,976	3,679
	50,286	63,543	77,487	77,444	68,027	72,206

Rayon and Staple Fibre

Rayon and Staple Fibre Industry in 1937

According to an authentic estimate, the world production of rayon and staple fibre in 1937 reached 1,725,000,000 lbs., showing an increase of 300,000,000 lbs. over the previous year. Of the total amount of the world's output of these two commodities Japan produced 504,000,000 lbs. including 330,000,000 lbs. of rayon and 174,000,000 lbs. of staple fibre. It represents 29 per cent of the world production, putting Japan at the head of the rayon producing countries. The rate of increase in Japan's rayon exports was hampered by the adverse measures adopted by various countries and the occurrence of the China Affair. Yet the total amount of exports of rayon yarn, tissues and other rayon products reached \$235,000,000, placing rayon next only to cotton textiles and raw silk in Japan's export trade. Efforts were made, in 1937, for the improvement of the quality of rayon and for making up the decrease in exports of rayon tissues by an increase in exports of rayon yarns. In the second half of 1937 various difficulties cropped up in the relation between demand and supply on account of various adverse conditions, causing an unprecedented curtailment of operation in mills to the extent of 39 per cent toward the end of the year. The business results of rayon companies had been very encouraging through the second half of 1936 and the first half of 1937.

The control measures employed by the Government in 1937 on importation of goods, foreign exchange and distribution of capital in the country rendered it difficult for the rayon industry to make a headway, especially

because of the dependence of this country on foreign pulp. However, Government regulation requiring the mixing of staple fibre with cotton and wool provided an impetus for the expansion of staple fibre industry, and the number of the companies concerned which received permission for collecting payment on shares and for raising funds for expanding the industry reached 36 and the aggregate expansion in funds amounted to ¥160,000,000 by the end of 1937.

With the progress of wartime measures in the country a thorough co-ordination of all companies and associations of spinning, weaving and dyeing industries was insisted upon and control measures were strengthened. By the establishment of the so-called planned economy which has required the curtailment of cotton and wool imports, it is intended to readjust international payments and to encourage the domestic production of pulp required for the staple fibre industry so as to make Japan self-sufficient with regard to the material within a five-year period according to a programme drawn out for the purpose. The rayon and staple fibre industry during 1938 will be much affected by the shortage of pulp.

Exports of Rayon In spite of the adverse conditions which the rayon industry had to face in 1937, the exports of rayon yarns and tissues (excluding miscellaneous goods which contain rayon) amounted to ¥215,000,000, showing an increase of ¥75,000,000 over the previous year, the increase being largely due to the rise in price. The rate of increase in quantity was much less than in the preceding years, as shown in the following table:

EXPORTS OF RAYON YARN AND TISSUES IN 1937

(In 1,000 bales. 1 bale=100 lbs.)

	Rayon Yarn		Rayon Tissues		Total	
	Quantity	Rate of Increase over the Preceding Year	Quantity	Rate of Increase over the Preceding Year	Quantity	Rate of Increase over the Preceding Year
1934	222	150.7	536	32.9	758	52.9
1935	304	36.9	707	22.7	1,011	26.9
1936	443	45.7	880	24.5	1,323	30.9
1937	565	26.9	808	-7.8	1,373	4.9

Note:—The figures for rayon tissues are derived by calculating 6 square yards as one pound.

Supply and Demand The production of rayon yarn in 1937 by the member companies of the Japan Rayon Manufacturers' Association amounted to over 325,000,000 lbs. and the production by others is estimated at 11,000,000 lbs., making a total of 336,000,000 lbs., showing an increase of 59,000,000 lbs. or 21.4 per cent over the previous year.

PRODUCTION OF RAYON YARN IN 1937

(Compiled by the Japan Rayon Manufacturers' Association)
(In bales of 100 pounds)

	Member Companies	Others and Total
January	252,608	267,131
February	255,849	266,920
March	264,852	272,954
April	269,280	277,280
May	279,591	287,591

PRODUCTION OF RAYON TISSUES (Compiled by the Ministry of Commerce and Industry) (In ¥1,000)

	Pure and Mixed with Silk			Mixed with			Total
	Broad Weave	Narrow Weave	Special Weave	Cotton	Hemp	Wool	
1935	147,388	38,840	27,409	35,151	27	30,847	279,664
1936	208,346	64,276	34,298	58,957	101	35,969	304,001
1937	269,865	74,149	37,022	50,057	902	40,032	472,940

It was feared that the unprecedented increase in the production of rayon yarn and tissues which was witnessed in the first half of 1937 might result in an excess of production over demand and the fears were justified when large

stocks were left over unsold toward the end of the year. The *Tokoku Rayon Times* gives the following figures on the consumption of rayon goods in 1936 and 1937.

CONSUMPTION OF RAYON GOODS IN 1936 AND 1937 (In '1,000 lbs.)

	1936		1937	
	Amount	Percentage to the Total Consumption	Amount	Percentage to the Total Consumption
Exports to foreign countries				
Rayon yarn	44,337	16.1	56,415	19.6
Rayon tissues	95,029	34.0	87,317	30.1
Rayon goods (estimate)	25,224	8.3	24,000	8.3
Total	164,590	58.4	167,733	58.0
Exports to Korea (estimate)				
Rayon yarn	3,669	—	3,200	—
Rayon tissues	15,705	—	30,000	—
Total (estimate)	19,374	7.3	33,200	11.4
Domestic consumption	96,325	34.7	89,066	30.6
Grand total of consumption	277,420	—	290,000	—
Yarn in stock at the end of the year	9,675	—	37,741	—

Note:—Figures for rayon tissues are calculated at 1 square yard as equivalent to 0.16 lb.

	Member Companies	Others and Total
June	278,794	286,794
July	294,676	302,576
August	288,704	296,794
September	270,001	278,001
October	285,548	293,548
November	275,909	283,909
December	231,594	239,520
Total for 1937	3,247,496	3,362,848
Total for 1936	2,618,352	2,765,552

At the end of the 1937 fiscal year, the number of spindles was 497,436, an increase of 64,000 spindles over the previous year.

The production of rayon tissues in 1937 was valued at ¥472,940,000, of which ¥331,836,000 was accounted for by rayon tissues either pure or mixed with silk and ¥91,000,000 by those mixed with cotton, hemp or wool, showing an increase of ¥88,939,000 or 23 per cent over the previous year.

The total demand amounted to 290,000,000 lbs., an increase of 5 per cent over the previous year, the increase being confined to exports. The domestic demand decreased 8 per cent, because of the dullness of the domestic market in the second half of the year. The total supply of rayon yarn is estimated at 330,000,000 lbs., including the production in the year, the balance of the

previous year and imports, of which 130,000,000 lbs. was consumed by the domestic market. The decrease in demand in the second half resulted in a big stock in warehouses amounting to 37,741,000 lbs. at the end of 1937. The rayon tissues in stock amounted to 7,990,000 lbs. at the end of the year, against 1,525,000 lbs. in 1936.

RAYON QUOTATIONS ON FUKUI MARKET

	Current Month		Futures	
	Highest	Lowest	Highest	Lowest
(In yen per 100 lbs.)				
1937				
January	98.0	89.0	96.40	79.9
February	88.0	79.0	86.70	76.2
March	86.0	78.0	85.90	75.1
April	87.0	81.0	88.20	81.4
May	83.0	79.5	82.70	78.9
June	89.5	82.0	85.40	79.3
July	91.0	70.0	85.40	69.00
August	73.0	65.0	71.50	63.30
September	71.0	67.0	73.20	69.10
October	70.0	65.0	71.60	67.10
November	64.0	60.0	66.40	61.00
December (up to 16th)	72.0	65.0	77.20	67.60
1938				
January	93.70	81.00	77.20	71.50
February	87.10	78.20	74.70	70.80

RAYON PRODUCTION

(In cases. One case=100 lbs.)

	Amount of Production	Increase Over Preceding Year	Percentage of Increase		Amount of Production	Increase Over Preceding Year	Percentage of Increase
1930	359,590	89,620	33.1	1935	2,230,214	645,263	40.7
1931	476,141	116,551	32.4	1936	2,765,051	535,337	24.0
1932	689,273	213,132	44.7	1937	3,247,496	462,445	17.4
1933	974,285	285,012	41.3				

SUPPLY AND DEMAND OF RAYON IN 1937 (In cases)

	Production of Yarn	Imports of Yarn	Exports of Yarn	Exports of Textiles	Domestic Consumption
January	252,608	19	32,763	60,871	158,993
February	255,849	58	28,206	59,328	168,373
March	264,852	32	35,895	73,716	155,273
April	269,280	46	41,517	61,039	166,770
May	279,591	42	59,977	70,496	149,160
June	278,794	66	58,648	69,939	150,273
July	294,676	113	53,909	66,847	174,033
August	288,794	98	36,177	55,433	197,282
September	270,001	49	57,235	71,141	141,674
October	285,548	102	77,279	73,557	134,814
November	275,909	14	48,297	67,047	160,579
December	231,594	—	34,255	71,995	125,344
Total	3,247,496	638	564,158	801,409	1,882,567
1936	2,765,552	238	443,371	871,203	1,451,277

EXPORTS OF RAYON YARN AND RAYON TEXTILES
ACCORDING TO DESTINATIONS

	Rayon Yarn		Rayon Textiles	
	1937 (In cases)	Increase Compared with 1936	1937 (In square yards)	Increase Compared with 1936
China & Hong-Kong	61,763	25,752	32,389,000	3,712,000
Manchoukuo & Kwantung				
Leased Territory	16,733 (dec.)	114,864	46,520,000 (dec.)	12,294,000
British India	306,702	165,578	94,854,000	2,773,000
Dutch East Indies	33,676	21,038	46,780,000 (dec.)	4,776,000
Other Parts of South Sea Region and Asia	29,307	11,247	84,091,000 (dec.)	3,718,000
Europe	7,370 (dec.)	11,579	19,600,000 (dec.)	1,801,000
North America	3,215 (dec.)	3,583	8,000,000	2,711,000
Central America	72,041	33,873	21,908,000 (dec.)	1,420,000
South America	11,336	6,630	18,402,000 (dec.)	10,224,000
Egypt & Africa	15,340 (dec.)	3,512	55,718,000 (dec.)	949,000
Australia	6,675 (dec.)	9,793	56,837,000 (dec.)	16,857,000

SUPPLY AND DEMAND OF RAYON YARN

Year	(In pounds)			
	Production	Imports	Exports	Real Supply
1926	5,000,000	3,288,149	—*	8,288,149
1927	10,500,000	791,650	37,524	11,254,126
1928	19,652,000	256,763	68,155	16,840,608
1929	25,716,000	624,980	153,877	26,187,103
1930	35,959,000	842,467	3,204,363	33,597,104
1931	46,764,120	1,154,634	2,555,521	45,363,233
1932	70,389,606	376,184	7,294,735	63,471,049
1933	90,423,900	509,147	8,859,500	82,078,447
1934	158,995,270	69,010	22,182,510	136,881,770
1935	223,021,400	43,300	30,427,900	223,064,700
1936	276,505,100	23,850	44,337,100	232,191,850
1937	324,749,600	63,820	56,415,800	268,397,620

* Exports before the year 1927 are negligible both in quantity and value.

EXPORTS OF RAYON FABRICS

	(In 1,000 yards)				
	1933	1934	1935	1936	1937
China and Hong-Kong	822.9	2,323.9	13,037.9	28,677	32,382
Manchoukuo and Kwantung	6,156.2	16,344.1	28,343.3	58,814	46,520
India	61,982.3	76,283.4	74,670.8	92,081	94,854
Dutch East Indies	60,798.1	46,726.1	49,987.3	51,556	46,780
South Sea Region	20,553.2	36,361.4	63,242.6	87,809	84,091
Europe	4,499.6	5,301.4	11,892.8	21,401	19,600
North America	631.6	852.1	1,455.4	5,289	8,000
Central America	9,930.5	20,743.8	15,565.7	23,328	21,908
South America	4,814.0	13,382.5	20,838.4	28,626	18,402
Egypt and Africa	50,395.9	68,156.7	69,878.3	56,667	55,718
Australia and New Zealand	22,749.2	46,402.1	75,228.7	73,694	56,837
Others	15,272.1	12,773.0	—	—	—
Total	260,054	345,655	424,000.0	527,942	485,098
Total Value (in ¥1,000)	77,381	113,484	128,260	149,170	154,860

Note: Figures of the Rayon Manufacturers' Association

EXPORTS OF RAYON YARN

	(In case of 100 lbs.)				
	1933	1934	1935	1936	1937
China and Hong-Kong	5,116.5	24,786.0	38,230	36,011	61,763
Manchoukuo and Kwantung	57,354	81,858.0	71,878	131,597	16,733
India	13,503	84,303.5	101,331	141,124	306,702
Dutch East Indies	554.0	3,000.0	8,989	12,638	33,676
South Sea Region	652.7	6,940.3	12,315	18,060	29,307
Europe	4,168	1,212.6	8,922	18,949	7,370
North America	95.0	9.5	3,418	6,798	3,215
Central America	3,432	15,329.8	23,769	38,168	72,041
South America	103.1	500.3	10,768	4,706	11,336
Egypt and Africa	16.6	3,198.0	11,111	18,852	15,340
Australia and New Zealand	3,630.9	449.9	15,548	16,468	6,675
Others	4.0	183.8	—	—	—
Total	88,627	221,771	304,279	443,371	554,158
Total Value (in ¥1,000)	9,483	22,397	22,852	39,170	44,792

Note: Figures of the Rayon Manufacturers' Association

Business Results of Rayon Companies

The quotation of rayon yarn at the Fukui market went up as high as ¥64.00 per 100 lbs. in January, because of the Governmental control on imports of pulp and speculation which became rife on account of the rising tendency in price. It is the record high since December 1934. After touching that level it began to trace a downward course, falling to ¥71.00 in August and ¥61.00 in November because of several adverse causes. While the price continued to fall the production cost rose from ¥46.17 in the first half of 1937 to ¥55.98 in the first half of 1938, because of the rise in the price of pulp, strengthening of trade control and the revision of tariffs abroad, and the rise of price of chemicals and wage rates.

The business results of rayon companies had been very satisfactory during the second half of 1936 and the first half of 1937, giving rise to a hope for higher dividends in the second half of 1937. But the uncertainty which prevailed in the national and international political situation in the second half of the year and the rise in the cost of production threw a shadow on the bright prospects with which the

year had commenced so that the leading companies kept the same dividend rate of 11.4 per cent throughout the year. In the second half of 1937 unfavourable conditions prevailed such as the stoppage of exports to China, decrease in speculative demand and financial difficulties among reelers, and the price went down as low as ¥61.00 per 100 lbs. But the contracts had been made at the high quotations which had been prevailing in the beginning of the year so that the business results of rayon companies were not much affected in general by the unfavourable conditions although the rate of dividend remained unincreased, and the year ended with fairly sound business conditions.

As is shown in the following table relating to the business results of the five leading rayon manufacturing companies in Japan, the paid-up capital in the second half of 1937 amounted to ¥140,372,000 against ¥134,250,000 of the similar period of the previous year; the aggregate profit increased from ¥17,660,000 to ¥22,370,000 or from 27 per cent to 32.3 per cent. The rate of dividend remained the same, but the rate of reserve was raised from 49 to 60 per cent, as a measure of precaution against a possible future emergency.

BUSINESS RESULTS OF FIVE LEADING RAYON COMPANIES IN 1937

(Consisting of Toyo Rayon, Teikoku Jinken, Nippon Rayon,
Asahi Benberg Silk and Kurashiki Kenshoku)

	1936		1937	
	First Half	Second Half	First Half	Second Half
Increase in paid-up capital	131,250	134,250	134,250	140,372
Profits	15,412	17,666	21,311	22,375
Reserves	6,027	10,622	12,918	13,529
Rate of profit	24.4	27.1	32.6	32.3
Rate of reserve	44.6	49.3	60.3	60.4
Rate of dividend	12.2	11.4	11.4	11.4

Encouragement of Staple Fibre Manufacture Staple fibre became the most favoured among the industrial products of the country on account of its usefulness as a substitute for cotton and wool. The Government is encouraging its production by issuing laws and regulations, making it exempt from consumption tax and requiring its mixture with cotton and woollen yarns. Accordingly, the production of staple fibre in 1937 increased remarkably. It amounted to 175,000,000 lbs., three-and-half times as much as that of 1936 which had amounted to 45,850,000 lbs. Japan is next to Germany in the staple fibre production being responsible for 28 per cent of the world production.

MONTHLY PRODUCTION OF STAPLE FIBRE IN 1937

(Compiled by the Japan Staple Fibre Manufacturers' Association)

(In 1,000 lbs)

	Member Companies	Out-siders	Total
January	7,850	1,100	8,950
February	9,121	1,100	10,221
March	10,083	1,000	11,083
April	10,495	1,200	11,695
May	11,618	1,200	12,818
June	13,946	1,200	15,146
July	16,416	200	16,616
August	17,317	—	17,317
September	17,970	—	17,970
October	17,751	—	17,751
November	16,713	—	16,713
December	17,868	—	17,868
Total for 1937	167,155	7,100	174,255
Total for 1936	45,850	—	45,850
1935	13,625	—	13,625
1934	4,720	—	4,720
1933	965	—	965

The capacity of this country for the production of staple fibre has greatly

EXPORTS OF STAPLE FIBRE AND ITS PRODUCTS BY COUNTRIES IN 1937

(In 1,000 kin for staple fibre and yarn, 1,000 square yards for the tissues, and ¥1,000 for the amount)

	Staple Fibre		Staple Fibre Yarn		Staple Fibre Tissues	
	Quantity	Value	Quantity	Value	Quantity	Value
Manchoukuo	2	4	3,179	3,559	2,039	935
Kwantung L. T.	1	1	108	118	6,213	2,748
China	2,633	1,902	707	769	312	117
Hong Kong	8	5	23	26	1,489	560
British India	145	119	1,473	2,045	688	256

increased during the years 1937 and 1938, on account of the expansion plans adopted by the staple fibre manufacturing companies and the turning of rayon manufacturing companies to this field. The aggregate productive capacity of the staple fibre companies at the end of May, 1937 was estimated at 215 tons per day while the actual production was 190 tons. At the end of 1937 the aggregate productive power of 9 staple fibre companies, 5 cotton spinning companies and 15 rayon manufacturing companies amounted to 600 tons per day and it is expected to increase to 970 tons by the end of 1938. To meet the present demand a daily production of 310 to 360 tons will suffice, estimating the daily demand of staple fibre for the purpose of mixing with cotton at 160 to 190 tons, with wool at 20 to 40 tons and for other purposes at 130 to 140 tons. The completion of the plans for expansion will depend on a large enough increase in demand during 1938 and after.

Exports of Staple Fibre According to the report of the Japan Staple Fibre Manufacturers' Association the total exports of staple fibre and its products in 1937 amounted to ¥22,100,000, the figure representing a four fold increase of the trade since 1936 although the exact figures for the latter year are not available. America was the largest customer for Japanese staple fibre, its purchases amounting to ¥5,641,000 or 70 per cent, China coming next. Manchoukuo was the largest buyer of staple fibre yarn, buying 48 per cent of the total exports, followed by British India and China. The best customers for staple fibre tissues were Kwantung Leased Territory, Manchoukuo, Hong-Kong, Finland and British India. There is an overwhelming demand for yarn and tissues in Asiatic countries which bought 90 per cent of the total exports of staple fibre products in 1937.

	Staple Fibre		Staple Fibre Yarn		Staple Fibre Tissues	
	Quantity	Value	Quantity	Value	Quantity	Value
Dutch East Indies	12	11	282	389	225	64
Union of South Africa	12	11	—	—	224	114
U. S. A.	7,921	5,641	13	11	48	20
Sweden	7	5	54	69	543	196
Finland	—	—	2	3	1,538	510
Germany	69	30	45	66	17	5
Australia	13	14	131	155	770	349
Others and Total	11,166	7,967	6,412	7,361	16,752	6,871

Supply of Pulp Japan's demand for pulp for the manufacture of rayon and staple fibre increased with the expansion of these industries in recent years. The amount consumed in 1937 is estimated at 300,000 tons, including 129,000 tons for the manufacture of rayon, 100,000 tons for staple fibre and 11,000 tons for cellophane. The total supply of pulp is estimated at 347,000 tons, including 56,500 tons produced at home and 290,500 tons imported from

abroad. The amount of imported pulp accounted for 85 per cent of the total supply and represents an increase of 71 per cent over the previous year. As indicated in the following table the chief sources of supply are the U. S. A., Norway, Sweden and Finland. From the United States were bought 47 per cent of the total pulp imports. Japan consumed about one-third of the world production of pulp for the manufacture of rayon in 1937.

SUPPLY AND DEMAND OF PULP FOR RAYON

(Compiled by the Ministry of Agriculture and Forestry)

(In metric tons)

	Supply			Demand			
	Production	Imports	Total	Rayon	Staple Fibre	Cellophane	Total
1932	3,600	60,000	63,600	36,273	319	527	37,119
1933	5,900	85,000	90,900	50,200	558	1,704	52,462
1934	17,160	102,932	120,092	78,092	2,739	2,184	83,015
1945	33,435	126,351	159,786	112,227	5,576	3,011	120,814
1936	55,209	169,368	224,577	152,263	29,410	4,299	185,972
1937 (estimate)	57,000	290,502	347,502	189,022	101,562	—	—

IMPORTS OF PULP FOR RAYON BY ORIGIN IN 1937

(In 1,000 kin and ¥1,000)

From	Quantity	Value
U. S. A.	2,340	38,760
Canada	347	6,038
Norway	940	15,285
Sweden	865	19,582
Finland	550	8,452
Czechoslovakia	71	1,137
Others and Total	4,919	80,368

Five-Year Plan for Self-Supply The expansion of staple fibre industry presents an acute problem on account of this country's dependence on imports of pulp. The national policy aimed at the readjustment of international payments by controlling imports is confronted with the paradoxical situation in which cotton and wool imports are curtailed but pulp imports are allowed to increase, because of the need for

mixing staple fibre with cotton and wool. In order to solve the problem a special committee within the Domestic Production Promotion Commission was formed which drew out a five-year plan for the expansion of pulp manufacturing industry to be worked out in the combined area of Japan proper, Chosen and Manchoukuo. The plan was revised by the Board of Planning and adopted by the Cabinet at the end of 1937. According to this plan, the present pulp productive power of Japan which is estimated at 871,000 tons is to be increased to 1,650,000 tons within a period of 5 years to meet the expected rise in demand in 1942, which is estimated at 1,650,000 tons, of which 1,150,000 tons will be absorbed for paper manufacture, and 500,000 tons for rayon and staple fibre. The plan calls for the enlargement of existing factories and the establishment of new ones in Japan, Chosen and Manchoukuo.

Woollen Industry

Woollen Industry in 1937

The production of woollen yarns and textiles during the year was considerably curtailed on account of the large stock left over from the previous year and the Governmental limitation on imports of wool in the second half of 1937. The monthly production of these goods fluctuated accordingly through the year while the price fell down steadily.

IMPORTS OF WOOL IN 1937

(Compiled by the Ministry of Commerce and Industry)

(In 100 kin and ¥1,000)

	Quantity	Value
1935	1,840,980	191,761
1936	1,640,636	200,898
1937	1,953,835	298,404

Exports of Woollen Yarns and Tissues

The rate of increase in the exports of woollen goods dulled down in 1937 as a result of the import control on raw wool and the occurrence of the China Affair. The quantity of exports of woollen tissues decreased from the previous year while the value increased because of the rise in price.

EXPORTS OF WOOLLEN GOODS

(Value in ¥1,000)

	Woollen or Worsted Yarns		Woollen Tissues	
	Quantity (in 1,000 kin)	Value	Quantity (in 1,000 sq. yards)	Value
1935	3,990	9,688	28,370	32,402
1936	5,356	15,313	37,004	45,956
1937	5,532	20,299	35,058	50,082

EXPORTS OF WOOLLEN TISSUES

By Kind

(Quantity in 1,000 Sq. Yards)

	Muslin	Cloths	Serge	Other
1935	2,397	1,212	17,676	7,083
1936	2,096	2,315	25,011	7,580
1937	1,573	1,562	26,649	5,274

By Countries

(In 1,000 sq. yards)

	1936	1937
Manchoukuo	991	2,609
Kwantung L. T.	9,999	7,262
China	2,914	2,780
British India	5,569	8,554
Dutch East Indies	267	3

	1936	1937
Egypt	3,166	2,823
Hawaii	36	34
Others	14,059	10,993
Total	37,004	35,058

IMPORTS OF WOOLLEN YARNS AND TISSUES

	Woollen Yarn		Woollen Tissues		Others and Total
	Quan- tity (In 1,000 kin)	Value (In ¥1,000)	Pure	Mixed	
1935	813	1,931	3,522	3,122	6,753
1936	678	1,873	4,686	4,828	9,675
1937	432	1,605	4,574	4,438	9,292

Mixing with Staple Fibre Imports of raw wool had always been in excess of exports of woollen manufactures so that an adverse trade had been particularly great in this industry. The Government therefore felt it necessary to impose restrictions on imports of raw wool while enforcing the use of staple fibre in woollen goods manufactured for home consumption. The staple fibre regulations were promulgated and enforced on October 1, 1937, stipulating that over 30 per cent of staple fibre shall be mixed with wool for making serge and blankets, and over 20 per cent for woollen cloths, not made of worsted yarn, and flannels.

Re-utilization of Wool from Wasted Woollen Goods The re-utilization of wool from wasted woollen goods is gaining ground as a new industry in Japan since the beginning of 1937. The number of plants installed for the industry in the districts near Tokyo increased from about 10 in 1936 to 80 in the middle of 1937. The quantity of discarded or wasted woollen goods collected is estimated at about 20,000,000 lbs. in 1937. The amount of wool which may be consumed by Japan's woollen factories at full operation is roughly estimated at 1,320,000 bales a year, although the actual consumption in 1937 was about 1,020,000 bales, including the imported wool and re-utilized wool. As to the quantity of wasted woollen goods collected in the country till now, no authentic figures are available, but it is estimated at 26,400,000 lbs. or 146,000 bales. With the improvement in the facilities for collecting the wasted products, the figure is expected to be doubled or trebled in the near future.

SUPPLY AND DEMAND OF WOOLLEN YARN

(In 1,000 pounds)

	Production by Associated Co's.	Imports	Total	Exports	Balance
1931	77,586	9,550	87,136	698	86,438
1932	89,660	3,219	92,879	1,249	91,630
1933	101,361	1,638	102,999	3,168	99,831
1934	103,145	919	104,064	5,919	98,145
1935	123,263	1,088	113,363	5,319	108,544
1936	125,330	934	124,196	7,141	117,056
1937	125,330	576	125,906	7,402	118,504

Note: The balance represents domestic consumption.

EXPORTS

(Value in 1,000 yen)

	1932	1933	1934	1935	1936	1937
Woollen yarn						
Quantity (1,000 pounds)	1,289	3,169	5,920	5,319	7,140	7,402
Value	1,697	5,293	12,185	9,688	15,312	20,208
Woollen materials						
Value	5,679	12,770	30,420	32,401	45,956	50,082
Total value	6,376	18,063	42,605	42,089	61,266	70,290

IMPORTS

	1932	1933	1934	1935	1936	1937
Woollen yarn						
Quantity (1,000 pounds)	3,219	1,638	913	1,085	905	576
Value	5,143	3,021	1,708	1,931	1,873	1,605
Woollen materials						
Value	10,662	7,338	5,316	6,753	9,675	9,292
Total value	15,805	10,357	7,024	8,684	11,548	10,897
Balance between Exports & Imports						
Value	9,429	7,706	35,581	33,405	49,720	59,393

JAPAN'S IMPORTS OF RAW WOOL¹

	Quantity in 1,000 lbs.	Value in ¥1,000	Quantity in 1,000 lbs.	Value in ¥1,000
1930	115,999	73,919	1936	219,951
1931	191,374	86,518	1937	259,096
1932	206,858	88,321		
1933	242,620	165,818		
1934	184,379	187,667		
1935	247,275	198,575		

Note: (1) Including tops and goat and camel hair.

IMPORTS OF RAW WOOL BY COUNTRIES

(According to the Woollen Industrial Assn. Statistics)

(In 1,000 lbs.)

	1933	1934	1935	1936	1937
Australia	227,430.6	155,375.9	230,269.6	154,691.3	97,512
New Zealand	1,835.0	10,187.7	7,276.1	23,737.4	39,160
South American Countries	6,126.6	10,579.3	4,212.7	9,707.0	19,447
Union of South Africa	4,029.5	5,233.0	2,594.6	18,621.6	73,944
Great Britain	1,245.4	854.7	783.7	1,123.8	827
Kwantung L. T.	167.8	163.4	63.4	5.1	393
China	1,675.8	1,854.2	1,927.3	673.9	395
Others	108.4	130.7	147.7	8,454.7	26,766
Total	242,620.4	184,379.2	247,275.5	217,015.1	258,444

Note: Figures for 1936 and 1937 are of sheep's wool only.

THE TEXTILE INDUSTRY

WOOLLEN TEXTILE MANUFACTURING FACILITIES

(At the end of the year)

	1931	1932	1933	1934	1935	1936
Number of woollen textile factories	1,039	1,138	1,178	1,226	1,421	1,528
Number of weaving machines	22,484	26,554	26,923	27,162	29,421	31,220
Number of operatives	37,955	41,606	41,311	44,347	47,142	50,046
Number of worsted spindles ¹	563,710	581,564	667,390	763,878	873,066	991,140
Number of weaving machines ¹	9,391	10,043	9,871	10,257	10,248	10,261
Number of woollen spindles ¹	75,096	87,893	88,403	91,272	97,917	119,048

Note: 1 Only member companies of the Woollen Industrial Association.

PRODUCTION OF WOOLLEN TEXTILES

Year	Muslin		Serge for Japanese Clothes		Serge for Foreign Clothes	
	Quantity in metres	Value in yen	Quantity in metres	Value in yen	Quantity in metres	Value in yen
1927	151,504,365	87,456,216	18,243,816	28,103,617	5,475,992	13,745,387
1928	167,767,956	96,128,166	18,278,821	26,006,532	11,241,774	25,933,480
1929	155,520,238	86,382,054	17,981,742	25,477,646	8,087,637	17,767,617
1930	144,761,911	59,238,243	19,191,778	20,509,696	8,584,950	14,454,176
1931	150,123,006	47,541,759	21,115,651	16,531,059	17,492,010	25,228,168
1932	160,905,369	48,245,070	19,221,833	14,963,040	18,759,694	30,804,399
1933	130,698,059	47,974,272	13,660,552	13,733,495	23,311,081	47,538,799
1934	126,563,462	52,759,710	14,431,770	13,817,615	28,223,375	47,713,751
1935	130,332,357	53,762,835	16,271,400	19,622,663	33,659,334	54,424,688
1936	108,869,819	47,741,304	17,840,589	19,201,771	39,648,355	73,499,719

Year	Woollen Cloth		Flannel		Blankets (including travelling rugs)	
	Quantity in metres	Value in yen	Quantity in metres	Value in yen	Quantity in metres	Value in yen
1927	4,295,625	12,156,580	2,528,866	4,045,635	485,991	3,228,532
1928	9,706,449	29,362,162	2,445,326	4,249,922	479,084	3,109,202
1929	11,375,568	32,419,984	2,154,519	3,344,022	821,178	3,512,149
1930	8,916,418	21,546,853	2,510,269	3,039,433	743,293	3,066,618
1931	10,514,367	19,765,358	2,494,499	2,662,740	1,283,660	3,786,538
1932	12,104,818	21,641,679	3,180,952	2,944,438	1,492,742	4,307,015
1933	13,516,375	29,573,573	2,260,368	2,504,560	1,553,527	5,801,610
1934	19,127,217	45,569,431	1,525,375	2,018,748	1,790,142	6,135,739
1935	22,133,718	51,485,561	1,253,199	1,162,626	1,900,562	7,163,880
1936	23,199,085	62,695,766	1,666,295	2,050,220	1,488,355	6,861,879

	Carpets Value in yen	Rugs Value in yen	Plush and Velvet Value in yen	Others Value in yen	Total Value in yen
1927	156,649	38,964	219,766	13,925,724	163,077,070
1928	493,504	97,106	452,848	4,585,363	190,418,285
1929	177,399	154,151	800,596	6,859,964	176,895,582
1930	215,696	204,146	590,269	9,674,832	132,539,962
1931	150,980	203,082	606,856	3,803,130	120,279,670
1932	199,939	163,054	565,167	4,176,248	127,910,049
1933	291,267	285,872	805,695	6,130,260	154,639,423
1934	394,565	183,904	904,195	11,938,645	181,436,303
1935	530,069	116,425	1,582,754	12,783,253	202,634,734
1936		795,617	1,998,990	11,710,370	226,555,636

WOOLLEN INDUSTRY

JAPAN'S EXPORTS OF WOOLLEN GOODS

	Yarn		Muslin		Cloth and Serge		Others
	Quantity in 1,000 lbs.	Value in ¥1,000	Quantity in 1,000 sq. yards	Value in ¥1,000	Quantity in 1,000 sq. yards	Value in ¥1,000	Value in ¥1,000
1931	698	861	660	280	727	695	—
1932	1,289	1,697	1,516	569	2,854	2,531	—
1933	3,168	5,292	2,559	1,199	7,654	8,020	3,157
1934	5,919	12,184	4,202	2,185	16,128	19,098	8,564
1935	5,277	9,688	2,397	1,227	18,888	23,415	8,757
1936	7,140	15,313	2,096	1,066	27,327	34,358	11,598
1937	7,402	20,208	1,573	1,024	28,212	41,229	7,829

CHAPTER XIX

MACHINERY AND ENGINEERING

Machinery

Introduction

The manufacture of machinery in Japan started after the Restoration. The progress at first was very slow, and it was only after the Russo-Japanese War of 1904-1905 that the public began to take any real interest in investment in this kind of industry. Improvement was gradually being made before the Great War, but with the outbreak of war the situation completely changed. Prior to the War Japan had to import large quantities of machinery, but during the War imports were stopped, and a great stimulus was thereby given to home production. During the war years Japan became able to supply not only most of her own needs, but also some of those of foreign countries. Factories for manufacturing arms and various kinds of machinery, as well as shipbuilding-yards, were established in many parts of the country, and these profited both financially and in the experience they acquired in skilled mechanical work of various kinds. The great boom in shipbuilding stimulated the establishment of many new works for turning out engines and other equipment for steamers, while the difficulty of obtaining imported machines for spinning, weaving, papermaking, etc., caused a rapid establishment of new works for their manufacture. This cutting off of imports also served to encourage the manufacture of motors, electrical machinery, automobiles and aeroplanes. With the great post-war slump, naval disarmament, general depression the world over, embargo on gold, high tariffs, and all the other ills from which industry suffered the machinery production industry was heavily hit. The outbreak of trouble in Manchuria in September, 1931, and the military operations which followed, created a new demand for arms, while the reimposition of the gold embargo, and subsequent decline of the value of the yen served to revive the industry.

Machinery Manufacturing Industry in 1937

The machinery manufacturing industry in this country has been very active since it was decided to perfect national defence. The advance achieved by the industry during 1937 was quite remarkable, all the companies concerned recording an improvement in their business conditions without exception, under the influence of the enormous spending envisaged from the budget, and the Governmental encouragement for the expansion of the productive power of the companies.

Particularly were the leading companies affected because they were required to expand their productive equipments, and many companies increased their capitalization.

Increase in Deliveries Ever since the quasi-emergency began, and by the occurrence of the China Affair in 1937, the production of machinery has shown an increase every successive business term. The big seven machinery manufacturing companies, the Mitsubishi Heavy Industry, the Hidachi Seisakusho, the Kokusan Kogyo, the Shibaura Seisakusho, the Niigata Iron Works, the Ishikawajima Works and the Daido Denki Seiko manufactured various sorts of machinery to a total value of ¥339,002,000 during 1937 against ¥288,707,000 for the preceding year. Their total annual production during the past five years was:

1932	¥75,310,000
1933	98,140,000
1934	163,907,000
1935	247,819,000
1936	288,707,000
1937	339,002,000

The increase in production has been especially remarkable since 1934. When considered in terms of index numbers, the increase was from 100 in 1932 to 399 in 1936. The following table shows the production by each of the big seven:

IN 1937

543

Companies	1935	1936 (In yen)	1937
Ishikawajima	15,422,000	17,724,000	23,988,000
Daido Seiko	6,238,000	6,575,000	9,254,000
Hidachi Seisakusho	56,912,000	68,952,000	104,412,000
Kokusan Kogyo	25,556,000	26,389,000	(a)
Shibaura Seisakusho	28,348,000	35,853,000	41,383,000
Niigata Iron Works	13,342,000	15,207,000	25,380,000
Mitsubishi Heavy Industry	103,001,000	118,007,000	134,585,000
Total	248,819,000	288,707,000	339,002,000

(a) Merged with Hidachi.

Fixed Capital of Manufacturers Compared with the increase in production, the fixed capital of the various manufacturing companies has swollen only slightly. Many companies have employed their old facilities to their full capacity and many of them added new equipment. The raising of the fixed capital of the principal companies including the aforementioned big seven, the Tokyo Gas & Electric Industrial Company, the Ikegai Iron Works and the Osaka Machinery Works during the past five years is tabulated below:

1st half of 1932	¥ 85,366,000
2nd half ..	86,164,000
1st half of 1933	83,424,000

2nd half ..	¥ 86,224,000
1st half of 1934	100,915,000
2nd half ..	105,447,000
1st half of 1935	108,619,000
2nd half ..	118,031,000
1st half of 1936	119,634,000
2nd half ..	126,012,000
1st half of 1937	121,349,000
2nd half ..	146,582,000

The above figures show that the fixed capital of the principal companies in the second half of 1937 had gained by ¥63,158,000 or 75 per cent over the figures for the first half of 1933. To go into details all the companies increased the fixed capital as shown in the following table:

	1st Half of 1932	1st Half of 1937 (In yen)	2nd Half of 1937
Ishikawajima Works	6,829,000	4,920,000	5,836,000
Daido Seiko	2,564,000	4,118,000	4,506,000
Hidachi Seisakusho	11,232,000	30,748,000	47,708,000
Kokusan Kogyo	5,989,000	(a)	(a)
Tokyo Gas & Electric Industrial	12,955,000	8,519,000	5,895,000
Ikegai Iron Works	3,196,000	3,312,000	3,366,000
Shibaura Seisakusho	13,572,000	13,091,000	15,425,000
Niigata Iron Works	3,945,000	4,465,000	5,208,000
Mitsubishi Heavy Industry	24,521,000	49,119,000	55,000,000
Osaka Machinery Works	503,000	3,037,000	3,638,000
Total	85,366,000	121,349,000	146,582,000

(a) Merged with Hidachi.

On the other hand, the floating capital has increased quite markedly. At the end of the first half of 1932, the floating capital of the 10 principal companies totalled ¥123,310,000 but by the end of the first half of 1937, the amount had risen to ¥347,694,000. Although accurate figures are still unavailable, it is estimated that the amount further increased to ¥464,700,000 in the latter half of the year. The increase in floating capital is attributed to the increase in the amount of goods manufactured, materials and deposits with banks. It must be noted

that the increase in manufactures and materials does not occasion any unrest under prevailing conditions because they are readily convertible into cash.

Encouragement of the Industry Late in March, 1938, the 73rd Diet adopted Government bills granting privileges to and providing for supervision of the machine-tool and aircraft manufacturing industries.

Under the new laws, the two industries to be exempt from income taxes and business profit taxes for five

years. Machine-tools and other materials necessary for the expansion of the two industries are to be free from import duties.

The laws further provide for the grant of special subsidies for the encouragement of the industries. Companies will be allowed to increase capitalization before the full-payment of the capital and to float debentures to an amount twice as large as the paid-up capitalization.

The advance of Japanese machine and tool production in the past 25 years is traced below :

GROWTH OF MACHINERY INDUSTRY

(Amount in ¥1,000)

Kind	No. of mills	No. of operatives	Value of production
1914	388	80,862	110,800
1921	526	162,724	508,321
1926	4,429	273,269	538,917
1929	5,296	190,154	602,182
1930	5,604	205,308	615,602
1931	6,479	—	443,340
1932	6,738	230,896	543,842
1933	7,850	249,323	888,195
1934	9,181	314,669	1,159,167
1935	10,352	367,263	1,462,520
1936	11,766	456,963	1,716,352
1937	—	—	1,874,000 (estimate)

PRODUCTION OF ENGINES

(Value in yen)

Year	Steam Engines		Steam Turbines		Gas Engines		Internal Combustion Engines		Total
	No. Produced	Value	No. Produced	Value	No. Produced	Value	No. Produced	Value	
1927	234	—	—	1,251,468	—	—	15,307	13,982,015	15,307
1928	313	—	—	397,036	—	—	19,644	19,118,828	19,644
1929	931	2,615,111	15	754,858	128	104,545	965	9,660,598	23,828
1930	74	298,341	42	2,220,460	575	340,416	1,337	11,852,363	104,854
1931	97	80,769	17	1,458,889	10	8,800	778	5,008,217	15,295
1932	77	150,006	86	1,022,760	103	76,472	2,371	20,587,362	16,558
1933	162	580,519	51	7,269,146	142	116,780	5,546	32,360,597	17,229
1934	105	617,215	102	6,893,407	54	15,948	4,866	19,784,471	53,889
1935	144	1,308,033	187	10,551,116	14	43,260	8,439	21,092,789	35,603
1936	129	2,405,409	106	8,352,713	4	7,850	8,354	30,948,045	37,291

Year	Internal Combustion Engines		Water Wheels		Total	Production of Fittings	Grand Total
	No. Produced	Value	Turbine Wheels	Pelton Water Wheels			
1927	—	—	625	—	2,008,930	7,154,090	24,396,503
1928	—	—	590	—	1,278,773	2,944,316	23,739,051
1929	1,579	7,557,746	261	2,031,407	2,221,580	2,253,087	33,935,624
1930	2,274	6,759,923	115	1,890,568	35,811	1,926,376	36,577,837
1931	2,002	8,248,660	111	765,540	81,521	847,063	22,215,098
1932	1,783	5,790,541	173	575,847	1,492	577,339	34,118,552
1933	3,961	11,618,068	91	183,076	318,189	501,265	59,365,282
1934	4,151	15,267,978	164	1,319,476	133,348	1,452,824	54,372,363
1935	4,310	17,680,899	124	1,541,528	298,999	1,840,527	68,908,768
1936	12,510	20,987,381	202	4,419,243	425,778	4,245,021	86,465,221

PRODUCTION OF BOILERS

(Value in yen)

Year	Water-Tube Style		Cast Iron		Others		Fittings and Accessories	Total for Producing Gas
	No. Produced	Value	No. Produced	Value	No. Produced	Value		
1927	—	762	—	1,221,052	—	—	1,221,052	160,841
1928	—	1,482	—	3,028,145	—	—	3,028,145	108,198
1929	179	2,375,285	295	42,032	1,529	1,968,055	1,264,520	5,649,982

Year	Water-Tube Style		Cast Iron		Others		Fittings and Accessories	Total	Machinery for Producing Gas
	No. Produced	Value	No. Produced	Value	No. Produced	Value			
1930	143	2,573,598	374	249,798	844	1,097,745	1,283,860	5,169,731	952,585
1931	86	2,388,832	89	50,330	1,180	1,197,505	2,724,523	6,369,190	727,929
1932	86	1,185,444	264	178,000	1,257	2,384,306	701,659	4,449,409	586,440
1933	120	2,071,541	281	217,976	2,020	5,617,207	3,647,849	11,554,573	1,210,160
1934	155	8,327,410	14	386,254	1,531	5,965,028	6,413,992	21,092,684	1,092,612
1935	255	19,663,758	382	437,146	1,743	3,942,038	10,228,313	34,469,255	1,594,975
1936	309	16,064,129	426	587,000	1,794	6,939,190	8,122,970	31,733,289	1,805,807

PRODUCTION OF PUMPS, COMPRESSORS AND FANS

(Value in yen)

Year	Pumps		Hydraulic Compressors		Gas Compressors		Blowing Machines (Fans)	
	No. Produced	Value	No. Produced	Value	No. Produced	Value	No. Produced	Value
1927	94,100	7,863,534	—	—	—	1,407,917	—	35,508
1928	114,450	9,012,981	—	—	—	1,551,576	—	2,602
1929	170,258	8,606,986	756	439,835	1,244	1,535,262	12,004	838,693
1930	515,642	8,002,940	1,084	452,580	9,239	3,152,991	1,475	599,142
1931	398,832	6,837,601	688	358,938	2,230	1,627,198	13,266	748,891
1932	290,480	6,510,822	1,102	720,903	2,199	1,123,213	28,433	755,241
1933	290,477	9,669,019	833	810,502	1,969	1,721,220	4,152	1,143,718
1934	427,999	13,027,236	1,152	1,175,656	3,323	3,993,231	5,425	2,410,354
1935	322,667	15,153,628	1,166	1,346,068	5,026	5,350,943	12,369	3,914,662
1936	461,113	19,680,578	1,479	1,828,575	—	11,231	—	3,634,164

PRODUCTION OF METAL MANUFACTURING MACHINES AND MACHINE TOOLS

(Value in yen)

Year	Metal Manufacturing Machines		Machine Tools		Total
	No. Produced	Value	Drills, Cutters, etc.	Others	
1927	—	8,259,271	—	—	—
1928	—	7,671,887	—	—	—
1929	464,252	5,585,895	942,269	3,398,810	4,348,087
1930	32,737	4,436,549	1,167,163	3,179,858	4,347,021
1931	114,756	3,944,923	1,280,939	2,530,871	3,811,810
1932	33,654	8,198,267	879,924	3,081,695	3,961,619
1933	50,103	15,403,826	1,504,395	3,963,961	5,468,356
1934	330,863	23,460,057	3,430,479	6,321,597	9,752,076
1935	72,425	30,175,664	5,769,157	6,997,441	12,766,598
1936	(Figures are unavailable)				

PRODUCTION OF OPTICAL INSTRUMENTS

(Value in yen)

Year	Lenses, Including Prisms		Microscopes	Telescopes	Field-glasses	Glasses
	No. Produced	Value				
1930	—	402,739	94,172	16,470	2,955,885	317,550
1931	—	433,338	72,076	20,885	98,741	230,338
1932	—	572,961	54,750	182,302	227,325	360,114
1933	—	787,249	261,727	1,433,169	3,304,068	126,050
1934	—	954,515	328,834	2,160,119	5,539,078	62,400
1935	—	1,276,617	391,474	5,488,746	2,235,208	90,483
1936	—	1,536,575	553,498	4,319,450	2,109,484	52,644

PRODUCTION OF MEASURING AND WEIGHING INSTRUMENTS

Year	(Value in yen)						Total
	Rules	Measures	Scales	Gas Meters	Water Meters	Accessories and Fittings	
1927	1,371,711	807,119	3,224,781	3,353,941	59,500	215,927	9,002,977
1928	1,150,781	714,147	3,210,425	1,791,125	844,280	372,705	8,083,263
1929	1,027,579	849,754	3,239,202	5,202,256	576,789	477,360	11,372,946
1930	794,776	298,269	3,033,458	2,998,262	1,379,397	411,724	8,913,866
1931	581,717	248,705	2,443,134	1,998,534	1,345,382	264,173	6,881,645
1932	705,516	175,568	2,228,220	1,870,250	1,485,165	466,348	6,931,071
1933	869,288	298,100	3,692,690	2,042,099	1,391,487	467,937	8,761,607
1934	1,019,479	228,432	3,848,631	2,064,405	1,141,105	508,076	8,010,124
1935	1,224,720	580,202	4,200,844	2,236,139	1,660,923	642,901	10,545,729
1936	1,318,589	709,227	4,597,311	3,938,352	1,660,144	896,845	13,120,468

PRODUCTION OF VARIOUS METERS

Year	(Value in yen)						Others	Total Value
	Thermometers No. Produced	Clinical Thermometers No. Produced	Electricity Meters No. Produced	Value				
	Value	Value	Value	Value				
1927	1,069,946		4,785,048				5,854,994	
1928	923,156		7,933,606				8,856,762	
1929	732,099	425,584	912,172	795,286	184,181	2,128,577	6,240,404	
1930	745,307	391,415	1,046,500	841,766	209,287	2,772,177	6,979,778	
1931	676,743	310,924	1,237,192	777,377	213,011	2,657,049	6,811,921	
1932	511,786	273,356	1,388,889	883,335	395,298	3,997,290	7,776,361	
1933	750,742	431,194	1,518,544	839,151	439,269	7,312,489	13,278,122	
1934	987,023	393,973	1,884,875	1,095,826	539,273	7,247,533	16,676,086	
1935	1,024,870	398,441	1,886,433	1,088,657	517,888	8,901,676	23,230,419	
1936	1,064,192	341,085	2,069,867	1,137,237	719,498	8,175,176	29,290,737	

PRODUCTION OF CLOCKS AND WATCHES

Year	(Value in yen)								Total	
	Electric Clocks		Stand Clocks		Clocks		Watches			Fittings, etc.
	No. Pro-duced	Value	No. Pro-duced	Value	No. Pro-duced	Value	No. Pro-duced	Value		
1927		1,079,542	2,535,241	590,464	2,921,621	104,771	976,043	2,445,318	6,873,433	
1928		1,135,958	2,612,744	425,257	2,608,781	78,097	866,169	3,318,187	9,403,631	
1929	6,870	303,946	1,232,269	2,664,390	506,504	2,176,758	238,236	1,365,932	2,555,667	
1930	11,699	579,919	1,155,928	2,055,593	474,565	1,911,182	181,233	1,013,042	5,846,179	
1931	11,250	366,148	993,287	1,350,822	362,011	1,390,718	169,358	657,528	2,310,248	
1932	8,151	216,019	857,594	1,552,117	436,513	1,629,130	160,288	681,156	2,590,167	
1933	7,654	240,388	1,270,467	2,047,417	514,626	2,122,065	153,247	794,183	3,160,690	
1934	51,373	574,365	1,728,567	2,637,488	876,747	2,748,623	158,520	936,942	4,684,064	
1935	78,675	892,791	1,930,234	3,076,711	543,069	3,000,328	165,962	952,875	5,136,344	
1936	92,352	978,035	2,155,829	3,378,601	1,057,501	3,279,386	235,666	1,435,043	5,755,982	

PRODUCTION OF CRANES, ELEVATORS, etc.

Year	(Value in yen)				
	Quantity	Cranes		Holsts, Conveyors, etc.	Elevators
		Quantity	Value		
1927		4,369,902		2,325	
1928		6,757,231		7,777	
1929	2,538		4,052,300		4,157,486
1930	3,138		5,834,200		3,254,024
1931	396		1,828,835		2,174,962
1932	637		2,303,674		2,269,622
1933	1,278		5,402,508		4,607,460
1934	1,078		8,306,927		7,716,384
1935	1,339		12,961,504		10,134,238
1936	1,509		14,642,286		10,961,871

PRODUCTION OF VARIOUS MACHINERY FOR INDUSTRIAL PURPOSES

Year	(Value in yen)					
	For Agriculture	For Building and Civil Engineering Work	Instruments for Farming, etc.	For Mining	For Spinning and Textile Industries	For Ceramic and Cement Industry
1927	6,491,882		4,436,543	3,335,031	21,344,424	1,461,975
1928	6,595,176		3,854,062	5,221,161	28,804,281	1,221,839
1929	4,418,756	1,273,047	4,181,265	3,557,658	30,058,863	2,774,032
1930	3,589,150	751,150	3,016,369	3,124,345	21,221,609	1,387,210
1931	2,914,996	981,111	2,459,796	2,047,128	22,756,060	709,668
1932	4,297,720	898,830	3,187,430	3,060,091	27,478,098	1,044,278
1933	4,756,029	1,559,468	5,023,786	6,190,028	44,151,201	4,351,629
1934	5,720,304	1,351,098	5,176,672	9,672,126	64,653,507	5,258,333
1935	8,899,530	1,630,373	5,814,586	14,320,438	86,016,362	3,869,844
1936	11,021,222	2,793,359	5,171,958	13,405,110	99,338,746	5,216,179

Year	(Value in yen)						
	Printing	For Saw-mills	For Paper Manufacturing	For Various Chemical Industries	For Food Manufacturing	Printing Type	Miscellaneous
1927	4,010,304	1,842,597	1,872,688	1,617,056	3,395,474	1,435,545	3,327,681
1928	4,826,703	1,890,320	2,020,132	2,117,131	3,900,812	1,453,085	3,488,396
1929	7,076,059	1,625,210	1,409,687	3,875,862	4,930,476	2,631,617	4,319,305
1930	6,006,587	1,034,264	957,295	2,895,738	5,887,896	1,909,982	3,151,624
1931	5,320,524	1,419,285	695,861	2,638,421	3,443,043	2,462,696	3,696,522
1932	6,615,661	1,354,372	509,207	4,869,055	3,563,442	1,855,639	5,271,977
1933	6,992,743	1,976,830	1,642,611	14,341,447	5,495,501	2,085,210	6,788,473
1934	7,496,270	2,336,224	2,731,426	21,662,391	7,447,799	1,988,371	8,635,473
1935	7,333,631	3,171,813	3,890,798	23,577,954	9,421,217	2,251,215	11,331,071
1936	9,470,648	—	4,184,929	28,563,890	12,697,653	2,590,738	15,177,776

PRODUCTION OF MISCELLANEOUS INSTRUMENTS

Year	(Value in yen)						
	Safes	Gas Utensils	Water-service Apparatus	Valves, Cocks, etc.	Fly Wheels, Gears, Axles, etc.	Fittings and other Accessories	Others
1927	2,585,416	407,042	1,223,757	—	12,104,986	—	—
1928	2,131,932	880,300	2,274,056	—	10,628,650	—	—
1929	1,935,008	940,621	2,724,438	3,929,240	3,497,804	21,253,630	42,687,650
1930	1,025,262	317,309	1,478,908	2,227,996	6,565,132	20,002,974	32,278,969
1931	1,200,092	406,968	1,136,255	1,641,080	5,962,705	11,660,398	32,121,271
1932	1,204,764	723,906	2,019,744	2,360,581	7,714,205	29,484,929	48,954,102
1933	1,486,533	1,049,967	1,610,242	3,623,998	14,310,795	38,256,100	72,104,704
1934	1,588,840	970,178	1,899,536	7,155,687	14,022,842	46,770,100	89,859,874
1935	1,785,588	1,913,606	1,571,696	8,270,095	21,689,967	85,077,533	98,318,435
1936	2,353,585	1,219,673	1,972,403	12,037,373	18,503,304	99,472,973	299,660,394

PRODUCTION OF MUSICAL INSTRUMENTS, etc.

Year	(Value in yen)					
	Pianos	Organs	Violins, Mandolins, etc.	Others	Total	Gramophones Arms
1927			4,507,534		4,507,503	888,073
1928			5,187,348		5,187,348	837,390
1929	2,254,873	1,048,930	166,123	1,554,083	5,024,018	1,939,877
1930	1,678,600	1,016,210	119,188	1,147,472	4,161,670	2,096,439
1931	2,078,406	1,199,649	77,464	910,694	4,266,213	2,811,850
1932	1,907,456	941,951	52,184	994,383	3,868,974	3,110,657
1933	2,325,781	961,622	96,027	1,421,028	4,804,458	4,657,102
1934	2,465,038	931,591	134,802	1,943,023	5,474,454	6,355,129
1935	2,619,122	991,996	179,771	2,353,701	6,144,590	5,347,772
1936	2,788,388	999,608	249,192	2,600,399	6,567,787	5,614,129

MACHINERY AND ENGINEERING

PRODUCTION OF SCIENTIFIC AND MEDICAL INSTRUMENTS AND TESTING MACHINES, etc.

(Value in yen)

Year	Experimental and Testing Machines	Scientific Instruments	Surgical, or Orthopaedic Instruments	Surveying and Drawing Instruments	Registers, Typewriters, Adding Machines, etc.	Cameras, Magic Lanterns, Movie Cameras, etc.
					No.	No.
1927	569,452	798,785	1,827,135	299,541	—	1,113,697
1928	666,481	874,240	1,826,025	759,336	—	933,354
1929	736,400	7,175,891	2,295,556	904,369	1,529,458	769,608
1930	496,019	918,322	2,284,228	564,193	1,374,223	746,914
1931	431,364	476,407	1,902,771	427,924	1,388,942	1,126,227
1932	428,942	585,089	2,372,813	978,680	2,021,363	917,335
1933	1,414,604	871,644	4,572,566	778,229	2,157,272	1,085,272
1934	1,604,588	1,063,271	4,167,285	925,448	3,590,114	1,587,971
1935	1,469,971	1,079,028	4,970,556	1,153,736	3,697,656	2,570,575
1936	1,908,867	1,671,733	6,124,429	1,231,638	5,222,226	3,270,352

PRODUCTION OF ELECTRICAL MACHINERY
(Value in yen)

Year	Dynamios		Electric Motors		Rotary Converters		Frequency Changers	
	No. Produced	Value	No. Produced	Value	No. Produced	Value	No. Produced	Value
1927	—	—	81,131	21,299,433	—	20,421,677	—	—
1928	—	—	66,900	—	—	—	9	52,151
1929	13,949	7,913,075	77,039	16,032,609	6,610	1,714,285	8	109,276
1930	10,914	4,415,105	115,420	14,795,641	136	1,578,456	6	22,251
1931	3,953	4,865,869	88,083	10,369,400	1,161	1,082,559	11	12,184
1932	9,748	4,638,302	99,809	9,886,162	1,461	599,177	3	14,006
1933	58,600	7,720,547	195,005	21,553,794	1,269	1,470,000	2	6,200
1934	26,378	11,243,516	387,750	34,750,828	703	1,358,357	2	13,275
1935	13,285	14,784,165	374,319	43,914,591	10,042	1,776,216	21	242,815
1936	46,457	19,059,308	397,242	45,081,810	1,622	1,695,975	—	—

Year	Transformers Produced		Rectifiers Produced		Electric Fans Produced		Electric Heaters Produced		Insulated Wires
	No. Produced	Value	No. Produced	Value	No. Produced	Value	No. Produced	Value	
1927	—	—	—	—	—	—	—	—	77,611,760
1928	—	—	—	—	—	—	—	—	92,808,367
1929	329,388	12,330,720	2,393	189,520	79,634	1,719,114	255,848	1,904,604	36,651,108
1930	387,333	9,307,652	3,628	160,218	83,047	1,855,294	218,797	989,583	27,134,916
1931	341,561	5,863,860	275	315,327	44,019	761,538	535,860	1,130,569	21,441,985
1932	290,887	6,618,334	2,861	156,547	25,328	610,003	542,766	1,311,409	26,329,442
1933	324,167	9,976,642	1,097	278,657	46,041	866,070	733,819	1,415,757	39,487,609
1934	416,970	15,400,423	3,640	238,892	76,234	1,188,010	985,948	2,124,990	42,929,887
1935	288,774	19,936,149	19,588	523,097	45,342	911,892	912,524	2,646,725	56,721,405
1936	292,606	26,259,329	11,277	781,886	97,484	1,670,406	722,452	2,527,817	65,799,222

PRODUCTION OF ELECTRICAL INSTRUMENTS
(Value in yen)

Year	Instruments for Wireless Communication		Instruments for Telegraphic & Tele-phonie Comm's		Storage Batteries		Electric Batteries Dry Cells		Other Electrical Instruments
	No. Produced	Value	No. Produced	Value	No. Produced	Value	No. Produced	Value	
1927	—	—	—	—	—	—	—	—	—
1928	—	—	—	—	—	—	—	—	—
1929	4,714,704	9,111,019	793,456	6,480,389	25,881,277	5,940,331	12,420,720	39,624,223	29,294,880
1930	6,357,315	9,109,054	205,753	4,144,403	70,576,043	9,658,359	13,802,762	23,552,992	7,580,601
1931	9,582,428	6,284,448	206,278	3,337,901	23,552,992	4,242,700	7,580,601	23,552,992	24,167,323
1932	11,552,221	7,034,435	281,980	3,425,373	33,032,783	5,172,392	8,597,765	41,729,522	39,175,923
1933	19,293,426	7,696,588	358,871	4,819,752	41,729,522	6,836,878	11,456,635	51,425,306	50,722,078
1934	26,420,734	13,143,143	154,111	6,575,986	51,425,306	7,268,713	13,844,699	69,600,657	78,233,249
1935	24,591,013	12,824,613	101,984	7,566,928	69,600,657	8,513,616	16,080,544	79,696,249	79,232,599
1936	59,816,291	—	131,520	8,235,060	79,696,249	8,267,764	16,502,824	—	—

AIRCRAFT

PRODUCTION OF ELCTRIC BULBS, SEARCHLIGHTS, etc.

(Value in yen)

Year	Electric Bulbs		Searchlights		Others	Total
	No. Produced	Value	No. Produced	Value		
1927	87,254,705	26,315,412	—	—	—	—
1928	97,549,985	24,327,175	—	—	—	—
1929	134,183,114	17,763,744	10,344	2,464,676	2,507,385	22,736,605
1930	114,811,775	15,192,305	20,752	2,400,744	3,530,177	21,132,225
1931	202,054,444	18,038,888	—	968,606	3,459,829	22,467,323
1932	286,653,068	19,685,338	169	831,379	4,692,465	25,209,302
1933	340,392,875	21,970,879	174	679,973	6,942,939	29,593,791
1934	310,750,142	19,997,704	154	893,804	7,115,004	28,006,512
1935	308,683,271	21,209,930	283	100,473	9,040,724	30,351,127
1936	294,034,025	21,357,909	—	108,897	10,732,675	32,199,481

PRODUCTION OF LOCOMOTIVES AND ROLLING STOCK

(Value in yen)

Year	Steam Locomotives		Electric Locomotives		Gas Locomotives		Fittings, etc.	Total Value
	No. Produced	Value	No. Produced	Value	No. Produced	Value		
1927	257	—	—	13,091,554	—	—	—	13,091,554
1928	287	—	—	18,893,325	—	—	—	18,893,325
1929	229	13,629,565	36	1,285,567	78	484,280	2,631,372	18,030,834
1930	233	9,400,067	41	884,035	129	1,192,624	270,255	11,748,481
1931	109	5,029,536	47	1,506,247	163	1,454,003	216,223	8,206,009
1932	60	2,976,806	47	503,464	223	1,333,485	298,250	5,111,805
1933	167	6,270,177	29	609,386	288	1,486,822	1,340,408	9,706,793
1934	192	12,485,274	71	2,392,319	236	824,323	1,091,564	16,793,481
1935	347	21,878,540	51	646,003	336	2,196,869	812,492	25,733,904
1936	424	26,190,414	56	1,619,549	490	3,289,994	5,461,250	36,633,207

Coaches and Freight Cars

Year	Coaches and Freight Cars		Electric Cars		Rikisha Waggons		
	No. Produced	Value	No. Produced	Value	No. Produced	Value	
1927	3,558	12,769,427	—	—	363	46,775	—
1928	5,597	16,873,994	—	—	950	92,100	—
1929	3,996	14,532,052	919,049	535	5,882,521	1,618,233	1,608
1930	3,831	9,306,425	1,582,700	355	3,607,416	3,672,732	947
1931	1,508	3,881,066	221,088	180	2,019,861	1,492,455	1,448
1932	1,106	3,980,922	181,345	178	1,259,789	213,153	409
1933	1,452	8,064,776	853,179	129	1,663,722	501,857	550
1934	2,640	15,070,988	2,703,857	189	1,530,634	285,731	848
1935	4,804	18,986,601	3,035,150	237	2,783,490	225,086	760
1936	6,201	21,547,844	10,854,654	199	2,353,285	2,684,690	40

Aircraft

Introduction Captain Tokugawa was the first pilot to fly a heavier than air machine in Japan. This was in 1910. The manufacture of aircraft was commenced in the Army and Navy arsenals and manufacture under licence was farmed out to private companies. In this way the manufacture of aeroplanes was greatly encouraged and military and naval aircraft can now be satisfactorily manufactured at home.

History Dr. Ichita Kishi, a physician,

constructed at his own expense various workshops in his own residence at Tsukiji, Tokyo, and, in 1914, with the help of several expert engineers, succeeded in constructing an aeroplane engine, the first to be manufactured in this country. A trial flight of the aeroplane using this engine was very successful, so he manufactured his second aeroplane in 1916. In 1917, Mr. Nakajima, a retired engineer captain of the Navy, manufactured various kinds of aeroplanes with the help of Messrs. Mohel Ishikawa and Seibel Kawanishi. In

1920, the Aichi Tokai Denki Kaisha, Ltd. (Aichi Clock Electric Machinery Co., Ltd.) established an aeroplane department and in the same year turned out a seaplane. From that time this department has developed rapidly. In 1921, the Kawanishi Machine Company established an aeroplane factory in Hyogo, and started the manufacture of seaplanes in 1923. Also, in 1921, the Mitsubishi Aircraft Co., Ltd., brought nine experts in aeroplane manufacturing from Great Britain and began to manufacture both aeroplanes and engines on a large scale. The Kawasaki Shipbuilding Co., Ltd., following in the steps of the Mitsubishi Aircraft Co., Ltd., began manufacturing aeroplanes in 1922.

Present State of the Industry The aircraft manufacturing industry has shown considerable activity in recent years. Aside from military requirements, manufactures have received good orders from public bodies who have raised subscriptions to denote aeroplanes to the army and navy. Japanese manufactured civil planes have had many successes of late and orders have been coming in for these. Manufacturers of aircraft at present are as follows:

MANUFACTURERS OF AIRCRAFTS

Year	Makers of Bodies and Motors	Makers of Balloons and Airships
1927	6	2
1928	6	3
1929	6	3
1930	6	3
1931	7	2
1932	7	2
1933	8	2
1934	8	2
1935	8	2
1936	9	2

Automobile Manufacturing

History The first automobile to be manufactured in Japan was by the Tokyo Motor Car Works, under the management of Mr. S. Yoshida, in the year 1909, but until the present progress has been very slow. In 1910, several military motor cars were manufactured for the Army in the Osaka Arsenal, and in 1911, the Tokyo Automobile Factory commenced the manufacture of "DAT" cars.

The Tokyo Gas and Electric Co., Ltd., began to manufacture military auto-

mobiles "T.G.E." in 1916, and trucks in 1917. In 1918, the Military Automobile Subsidy Act was put into force and this company was the first to get a subsidy from the Army Department under the act. In 1920 the Tokyo Ishikawajima Shipbuilding Co., Ltd., began to manufacture passenger cars. Companies other than the above which are making automobiles are Hakuyusha, Ltd., and the Oriental Automobile Co.

Present State of the Industry The motor car industry is perhaps the only one of all the heavy industries in Japan of which the country has not anything to feel proud of to-day. While there are more than 175,000 cars, buses and trucks of all kinds in the country, almost all of them are imported, about 80 per cent of them being Chevrolets and Fords. Of the balance, a considerable number are other American and European makes. However, inasmuch as the motor car industry is as yet undeveloped a great future can be prophesied for it.

Passenger Cars The "Atsuta-go", modelled after the Nash and White, and from this year, the "Nissan" are the only passenger cars manufactured in Japan aside from the baby cars.

Buses and Trucks Bus and truck manufacturing is slightly better than passenger car making. The "Chiyoda" manufactured by the Tokyo Gas and Electric Co., and the "Sumida" made by the Jidosha Kogyo Kaisha have long histories. These companies are also jointly making the "Isuzu," designed by the Department of Commerce and Industry. These three classes of buses and trucks are supplied to the market in considerable numbers. Kyodo Kokusai Jidosha, which was established in 1933 by these two companies, is selling domestic trucks and buses of five classes. The Mitsubishi Heavy Industry Co., Ltd. is making the large-sized bus "Fuso-go" at its Kobe plant, the Kawasaki Sharyo Kaisha, Ltd. the truck and bus "Rokko".

Baby Cars and Motor Cycles Small motor cars are defined, in dimensions and power, by the "Regulations of Motor Cars" and include such small-sized cars as the "Datsun" car, rear cars, etc. Rear cars have made a marvelous development in Japan as a means of carrying small parcels. Their production totals 15,000 a year, for they are not only in use throughout Japan but are exported to Manchoukuo, the

South Sea Islands, etc. The sales of small-sized cars like the "Datsun", are rapidly increasing.

Accessories and Parts Associations and parts of motor cars used in Japan were almost exclusively of American make before replacement of the embargo on gold in 1931. Owing to the

low exchange rate which followed thereafter their importation became very difficult and domestic makes took their place. At present, even Chevrolet and Ford parts are being replaced by domestic makes. They are also being exported.

PRODUCTION OF AUTOMOBILES AND MOTOR CYCLES

Year	Imported Parts Assembled		Others Value	Accessories and Parts Value	Total Value	Motor Cycles		
	No.	Value				No.	Value	
1926							18,624,309	
1927							25,256,332	
1928							43,049,420	
1929	11,221	12,484,951	15,058	71,177,209	6,219,850	89,884,750	204	112,925
1930	20,596	34,903,822	1,254	3,626,252	4,493,958	43,024,032	793	413,808
1931	19,935	32,099,506	971	2,576,231	6,535,494	41,211,231	1,451	826,320
1932	13,853	28,869,297	710	4,748,608	6,095,992	39,703,897	2,113	1,619,279
1933	14,373	37,690,059	1,657	9,493,251	10,960,059	58,143,369	4,613	3,651,570
1934	29,689	75,955,529	2,770	15,871,197	22,736,076	114,362,802	7,750	6,029,283
1935	27,021	69,928,985	5,307	22,908,967	28,234,962	121,072,914	8,845	7,342,114

Imports of Automobiles In 1914 imports barely amounted to ¥500,000, but by 1929, they amounted to ¥30,000,000. Owing to the depression there was a drop to ¥20,000,000 in 1930, and to ¥14-

000,000 in 1933. The figures then took an upward course, rising to ¥32,302,000 in 1934, ¥32,539,000 in 1935, ¥37,036,000 in 1936, and ¥30,682,000 in the first half of 1937.

IMPORTS OF AUTOMOBILES & ACCESSORIES

Year	No. of Automobiles	(Value in yen)		Total Value
		Value	Value of Accessories	
1926	2,362	5,324,535	10,397,666	15,722,201
1927	3,895	8,063,063	10,218,909	18,281,971
1928	7,873	13,770,855	18,474,167	32,244,822
1929	5,018	9,545,870	24,062,513	33,608,383
1930	2,591	4,896,992	15,178,000	20,773,000
1931	1,887	3,378,000	12,951,000	16,329,000
1932	997	2,894,000	11,927,000	14,821,000
1933	491	1,864,392	12,517,753	14,382,145
1934	696	3,357,061	28,945,163	32,302,224
1935	943	3,302,241	29,387,106	32,589,347
1936	1,117	3,577,000	33,459,000	37,036,000
1937 (Jan.-July)	895	3,009,000	27,673,000	30,682,000

Bicycle Manufacturing

History A bicycle was first introduced into Japan in 1881 by an Englishman. In 1889, an American brought a bicycle with him from America. In 1904, frames and other accessories were imported from Great Britain, and the making of bicycles at a lower cost became comparatively easy and bicycles became very popular.

Before 1915, accessories other than saddles, rims, and chains were being

manufactured at home. Factories capable of manufacturing these latter articles on a large scale did not exist and it was impossible for small scale producers to compete against foreign products. From 1913 on, however, the demand for bicycles increased at great speed, and as the manufacturing of each of the above parts on a large scale became possible, bicycles came to be produced at a very low cost, though until the World War, those manufactured in Japan could not compete with

Note: Conditions of aircraft and automobile industries in 1936 and 1937 are not made public.

European-made ones. During the War, the art of manufacturing advanced so much that domestic bicycles could well compete in both quality and price with imported ones, and not only were home demands satisfied, but the Japanese product was exported to China, Russia, India and other countries.

Bicycles in 1935 Bicycles in use in Japan proper numbered 7,303,660, which means that one in every nine persons owned a bicycle. This compares favourably with Holland where the ratio is one bicycle to every seven persons. Moreover, the quality of bicycles made in Japan is so good that no country in the world can compete with her at the price at which she can sell. Exports of bicycles and accessories amount to ¥25,000,000 a year, and bicycles made in Japan can be seen in every country except Soviet Russia. There are some 800 manufacturers.

Conditions Suitable for Bicycles Conditions in this country are well suited to the use of this vehicle. The factors which have made for the increased demand are:

- (1) Individual wealth is comparatively small and the use of automobiles has not yet become universal.
- (2) Roads are mostly too narrow, though greatly improved of late, to take automobiles.
- (3) The making of bicycles, especially accessories like rims, is purely artisans' work, and is a type of work in which the Japanese people excel.

PRODUCTION OF BICYCLES IN JAPAN

(Value in yen)

Year	No. Produced	Value	Value of Accessories Produced
1927	89,629	3,093,083	—
1928	125,588	3,323,999	—

IMPORTS OF MACHINERY (unit ¥1,000)

Articles	1931	1932	1933	1934	1935	1936	1937
Watches, and parts thereof	2,161	2,853	2,094	2,684	4,021	3,742	5,645
Clocks, and parts thereof	205	140	147	112	191	170	299
Microscopes, etc.	166	255	126	230	279	301	394
Ammeters, voltmeters, etc.	141	101	78	64	60	—	—
Wattmeters	401	211	99	63	74	2,711	5,353
Other meters	1,030	1,074	1,526	1,479	2,248	—	—
Electric batteries, and parts thereof	176	176	106	134	85	—	—
Surgical or orthopaedic instruments	277	311	156	200	238	118	249
Surveying and drawing instruments	422	363	812	97	515	256	385
Registers, calculating machines, typewriters, etc.	738	590	574	1,020	1,247	2,001	2,012
Scientific instruments	1,017	1,039	1,049	1,003	1,529	1,265	2,638
Cameras, and parts thereof	1,419	966	765	1,418	2,582	3,949	6,382

Year	No. Produced	Value	Value of Accessories Produced
1929	90,285	2,593,051	16,133,063
1930	136,985	2,790,331	12,206,374
1931	105,088	2,022,013	13,747,235
1932	63,988	1,315,748	20,600,605
1933	118,405	2,164,804	26,390,495
1934	152,920	2,542,370	34,402,225
1935	90,885	2,260,889	38,880,853
1936	145,791	5,210,056	44,044,488

The principal places of production are Tokyo, Osaka, Aichi, Hyogo, and Fukuoka prefectures.

Imports and exports of cycles and accessories since 1927 are as follows:

Year	Imports	Exports
1927	3,527,000	1,879,000
1928	1,634,000	2,557,000
1929	1,280,000	3,429,000
1930	1,563,000	5,274,000
1931	1,153,000	7,119,000
1932	795,000	6,028,000
1933	619,000	12,114,000
1934	73,308	18,904,257
1935	85,545	17,430,446
1936	27,000	20,575,000
1937	—	23,451,000

Note:—Tyres are not included.

Imports of Machinery

Imports of machinery in 1937 totalled ¥242,201,000 against ¥153,087,000 for 1936. Imports of machinery by Japan, excluding automobiles and their accessories, from 1919 to 1928, were somewhere between ¥100,000,000 and ¥140,000,000. There was a sharp reduction in 1930, and in 1931 the bottom was reached, but since then there has been a yearly increase. (See Chapter XI.)

Articles	1931	1932	1933	1934	1935	1936	1937
Gramophones, etc.	240	98	38	41	32	—	—
Musical instruments	375	296	165	182	197	240	319
Telegraphic and telephonic instruments	1,223	1,664	2,989	1,468	1,513	1,292	1,939
Fire-arms	777	5,826	6,451	1,031	1,117	—	—
Railway carriages, etc.	132	74	47	65	62	106	103
Boilers	2,237	1,192	1,790	4,090	6,109	3,930	5,286
Fuel economizers	—	—	—	393	732	329	166
Steam turbines	695	182	58	430	1,331	1,385	1,055
Internal combustion engines (weighing not more than 250 kg.)	4,206	2,292	1,826	3,253	343	—	—
Internal combustion engines (weighing not more than 2,500 kg.)	5,486	9,507	13,954	17,277	14,801	—	—
Internal combustion engines (others)	1,237	667	366	247	413	—	—
Water-turbines and Pelton wheels	—	9	—	150	90	—	—
Dynamos, motors, etc. (weighing not more than 100 kg.)	1,126	1,405	1,372	829	1,044	—	—
Dynamos, motors, etc. (weighing not more than 5,000 kg.)	285	233	192	145	209	—	—
Dynamos, motors, etc. (others)	587	4	166	248	1,003	1,805	1,841
Transformers	162	111	64	85	75	—	—
Dynamos combined with motive machinery	161	47	112	2	6	—	—
Cranes	284	4	58	12	7	—	—
Capstans and other winding machines	142	34	117	35	90	86	193
Gas compressors	642	809	669	1,742	1,053	1,815	2,318
Sewing machines and accessories	2,924	3,265	2,183	5,866	6,473	7,939	10,574
Pumps	740	370	729	999	711	760	1,257
Blowing machines	541	161	145	231	192	591	790
Hydraulic presses	106	6	4	54	1,480	31	146
Pneumatic tools and machines	264	276	256	638	587	634	789
Metal or wood-working machines	3,069	5,807	16,246	21,433	18,295	—	—
Spinning machines	3,515	7,998	3,520	6,394	4,612	2,278	3,103
Weaving looms	55	106	12	40	224	—	—
Tissue-finishing machines	161	342	116	62	264	238	384
Knitting machines	145	75	82	1,773	1,645	410	709
Paper-making machine	38	37	9	—	616	284	418
Printing machines	195	291	20	224	502	—	—
Card clothing	—	—	—	—	3,869	1,911	2,309
Felt for paper making	—	—	—	—	1,250	1,340	1,547
Rolls and rollers	—	—	—	—	916	576	473
Milling-cutters, gear-cutters, etc.	—	—	—	—	417	434	757
Handicraft and agricultural machines	—	—	—	—	1,287	1,451	2,285

Note: Amounts of fire-arms, internal combustion engines and metal or wood-working machines are not made public.

Exports of Machinery

In 1937 Japan witnessed the highest record in exports of machinery of her own making. The value of exports was ¥27,699,000 which was an increase of 28 per cent as compared with the preceding year. The future of Japan's machinery manufacturing depends upon the degree to which her exports expand, and especially upon the development of the market in Manchoukuo. The invasion of Japanese products into

the Dutch East Indies, British India and other foreign markets is a matter of future prospect. The exportation of Japanese made spinning and weaving machines is very promising. The Toyoda Automatic Weaving Machines are very much in demand wherever the spinning industry prospers. Diesel-engines to be fitted into fishing vessels are built in Japan and shipped to the Dutch East Indies. Japanese made machines exported during the last 4 years follow:

	1934	1935 (In ¥1,000)	1936	1937
Hanging clocks	1,561	1,567	1,584	2,063
Table clocks	1,659	1,832	1,916	2,441
Surgical instruments	1,439	2,203	2,516	3,390
Electric batteries	1,443	1,723	1,909	2,262
Meters	—	1,318	1,543	2,270
Physical and chemical instruments	2,494	1,217	1,204	2,553
Musical instruments	465	628	693	850
Telephonic instruments	5,241	5,066	5,562	6,663
Phonographs	3,263	3,601	4,491	5,225
Measuring instruments	—	709	1,239	2,104
Steam boilers	2,652	1,901	1,731	3,560
Motors and dynamos	—	2,811	15,963	15,773
Transformers	—	1,243		
Switch boards	—	653		
Other electrical machinery	10,055	3,334		
Pumps	1,571	1,622	1,952	2,917
Metal or wood working machinery	1,189	1,941	4,907	6,233
Spinning machinery	6,281	8,977	15,121	25,440
Weaving machines	2,096	3,568		
Printing machines	1,127	1,104	1,000	1,443
Locomotives	8,422	13,776	15,087	9,314
Cranes	—	1,122	1,417	1,740
Internal combustion engines	—	1,910	4,058	4,683
Sewing machines	—	365	575	1,037

Shipbuilding

Introduction

The mercantile shipbuilding industry in Japan developed with the shipping business, while the development of warship building was mainly due to the urgent demands created by the Sino-Japanese and the Russo-Japanese Wars.

Owing to the construction of new vessels to be placed on subsidized lines, easy money and low interest rates, the shipbuilding industry which had been depressed since the close of the World War, revived and boomed temporarily in 1928. Tonnage output, which in 1919 amounted to as much as 674,000 tons, dropped to 53,000 tons in 1926. This was increased to 112,583 tons in 1928 and to 167,365 tons in 1929. However, as the improvement was brought about artificially and not by general improvements in economic conditions, the industry soon became dull again, and was further depressed by the enforcement of the conditions of the London Disarmament Agreement. Naval orders to private shipbuilding companies were reduced by 30%, which, together with the decreased orders from private transportation companies reduced the 1931 output to 84,004 tons and in 1932 to 50,763 tons.

Owing, however, to the subsidies granted by the Department of Communi-

cations since 1932 for the improvement of steamers, the shipbuilding industry has been fairly active. The subsidies were granted with an aim of constructing 200,000 tons of new steamers, and closed at the end of March, 1935. In addition to this, due to the low exchange rate, enquiries for steamers are forthcoming from Brazil, Siam, Italy, France, Sweden, Soviet Russia, Manchoukuo, China, etc. (See Chapter XXVI, Sea Transportation.)

Shipbuilding in 1936

The condition of the shipbuilding industry in Japan during 1936 was characterized by great activity throughout the year. The total tonnage of ships launched by the end of October reached 216,000 tons and it is estimated that with those launched from the beginning of November until the close of the year included, the total tonnage must have risen above the 280,000-ton level, thus doubling similar figures for the preceding year and quadrupling those for 1932.

Indications are that the shipbuilding circles in this country will witness still busier days this year. During the early part of November, 1936, there were already orders outstanding for ships totalling 600,000 tons, all of which had to be filled by the end of 1938. It is

expected that the vessels already launched or to be launched by the end of 1937 will total more than 300,000 tons.

The recent rise in the prices of materials has been hindering the conclusion of new shipbuilding contracts but as soon as prices have become stable many new orders are expected to be placed. The optimism over shipbuilding prospects is backed by the scheduled construction of warships to replace superannuated ones, new building, and the construction of superior merchantmen.

The Navy's orders for new vessels are bound to increase from this year because the first non-treaty year arising from the expiration of the Washington and London naval treaties is intended to be marked with the commencement of a five-year shipbuilding programme. As the naval years are insufficient to execute this, a considerable portion of it is expected to be carried out at the hands of civilian shipbuilders. It follows that the shipbuilding companies, which already have too many orders to fill, will have to expand their facilities in order to meet the demand.

Under these circumstances, the business conditions of the shipbuilding companies are expected to continue improving although the raising of wages and increases in taxes may be inevitable. However, it is difficult for the shareholders of the shipbuilding companies to expect dividends of a higher percentage in view of the specific nature of the shipbuilding industry. Instead, payments on outstanding portions of shares and capital increases are possible. Special interest attaches to the expansion of the medium-size and small-scale shipbuilding companies.

The great activity of the shipbuilding companies in this country during 1936 were the most remarkable of the kind since the close of the European War. As already stated, the total tonnage of ships launched by the end of October reached 216,000 tons and the 280,000-ton mark is believed to have been exceeded by the end of the year. A comparison with similar figures for the preceding four years is tabulated below:

SHIPS LAUNCHED

	No. of Ships	Total Tonnage
1933	67	79,820
1934	177	154,860
1935	195	145,901
1936	240	307,667
1937	226	500,000

Some circles even estimate that the total tonnage of ships launched during the year may reach the neighbourhood of 300,000 tons which would more than double similar figures for the preceding year and quadruple those for 1932. Needless to say, the activities of the shipbuilding circles are based on the improvement in the shipbuilding business. In this respect, it may be noted that there has arisen the necessity of replacing those ships which were constructed hurriedly during the European War. Further, the need for superior ships from the standpoint of profits is also accelerating shipbuilding programmes.

The bright prospects of the shipping business and the anticipation of higher prices of ships combine to increase the number of ships planned for construction. To make the shipbuilders busier, the imports of petroleum have been increasing rapidly and have caused successive orders to be placed for tankers. The development of the whaling enterprises is also increasing the orders for new whalers and catcher boats.

Statistics shows that a total of 830,000 tons under construction and ordered at the close of 1936. In addition, there were naval orders placed with civilian shipbuilders.

Prospects The present conditions are such that it is anticipated that the shipbuilding boom will continue until 1939. Barring unforeseen developments, no sudden unfavourable changes are expected even after 1939. As a matter of fact, some of the orders in hands are intended to be filled by 1939 because earlier filling is considered difficult. In spite of this fact, further orders are expected to be forthcoming.

According to a survey, the ships under construction as on November 1 totalled 218,000 tons. In addition, there were a total of 377,000 tons involved in ships the keels of which were in process of being laid. These two items make a total of nearly 600,000 tons. Supposing that it takes one year to complete the construction of ships totalling 300,000 tons, two years will be required for the filling of the orders now being worked on. In other words, the shipbuilding companies will be kept busy until the end of 1938 by those orders alone.

Also to be considered in this connection is the fact that there will be more orders for ships forthcoming from the Navy as presaged by the enormous naval estimates, which represent an increase of over ¥100,000,000 when com-

pared with similar figures for the preceding year. As it is considered urgent to construct capital ships for replacement purposes in view of the advent of the non-treaty era, civilian shipbuild-

ers are expected to be required to make good the shortage of facilities of the naval yards. (See Chapter XXVI, Sea Transportation)

PRODUCTION OF VESSELS

(Value in yen)

Year	Steel Vessels		Ships Other Classes		Total Value	Fittings of Ships
	No.	Value	No.	Value		
1927			1,433		65,930,642	1,583,123
1928			1,890		48,894,095	1,872,064
1929	846	45,108,579	2,611	79,600,721	52,709,300	1,090,042
1930	269	111,590,483	2,376	3,547,239	115,137,722	807,727
1931	245	34,991,786	1,840	3,184,897	38,176,683	638,378
1932	509	44,224,579	1,987	1,880,400	45,104,979	475,363
1933	335	37,208,750	2,558	2,767,288	38,976,038	316,170
1934	277	53,481,053	2,588	3,994,369	57,475,422	448,353
1935	328	81,875,746	2,234	4,875,522	86,751,268	836,511
1936	355	104,184,841	2,864	6,541,823	110,926,664	949,253

NUMBER OF DOCKYARDS, EMPLOYING MORE THAN 5 PERSONS AND THOSE EMPLOYED

End of	Dockyards	Officials	Technicians	Workmen	Others	Total
1927	—	2,281	3,380	93,807	2,142	101,610
1928	—	2,628	3,464	91,237	3,110	100,439
1929	—	2,546	3,376	49,855	3,762	59,539
1930	—	2,224	3,002	38,036	3,675	46,937
1931	—	2,053	2,805	33,439	1,207	39,514
1932	—	1,832	2,495	33,611	1,262	39,200
1933	360	2,069	2,677	39,068	1,878	45,692
1934	394	2,267	3,026	50,116	1,520	56,929
1935	395	2,302	3,416	53,918	1,692	61,328
1936	444	2,636	3,520	70,053	2,046	78,255

CHAPTER XX

UTILITIES

Electricity

At the end of 1936 the number of concerns engaged in the electric business was 1,172, and the number of private electric plants in factories, etc. was 8,695. The total capacity of these 9,867 plants aggregated 6,777,422 kw., the hydro-electric 3,759,334 kw. and the thermal-electric 2,924,778 kw. Plants under construction were to have a further combined capacity of 2,067,860 kw.

Year	Hydro-electric	Thermal	Others and Total
1929	2,581,949	1,611,674	4,193,623
1930	2,797,637	1,601,677	4,399,314
1931	3,056,936	1,599,588	4,656,524
1932	3,105,930	1,827,131	4,933,061
1933	3,168,705	1,912,037	5,080,742
1934	3,268,834	2,223,113	5,491,947
1935	3,407,997	2,638,572	6,046,569
1936	3,759,334	2,924,778	6,777,422
1937 (Oct.)	—	—	6,900,578

ELECTRIC POWER GENERATED FOR INDUSTRIAL PURPOSES

(in kw.)

Year	Hydro-electric	Thermal	Others and Total
1907	38,622	76,288	114,910
1912	233,339	228,864	462,203
1917	511,090	364,474	875,563
1918	597,124	386,842	983,966
1919	710,929	422,314	1,133,243
1920	825,387	552,159	1,377,546
1921	914,744	611,974	1,526,718
1922	1,070,060	709,113	1,779,173
1923	1,307,706	755,079	2,062,785
1924	1,474,357	763,146	2,237,503
1925	1,613,508	954,633	2,768,141
1926	1,965,970	1,236,644	3,202,614
1927	2,111,087	1,356,044	3,467,131
1928	2,290,351	1,531,703	3,822,054

TOTAL VOLUME OF ELECTRIC POWER GENERATED FOR LIGHTING AND INDUSTRIAL PURPOSES

(In kw. h.)

Year	Volume	Rate of Increase
1926	9,091,211,608	17.5
1927	9,746,104,610	7.2
1928	11,060,496,894	13.5
1929	12,207,749,306	10.4
1930	12,160,082,885	—
1931	11,892,215,264	—
1932	12,557,696,988	5.6
1933	16,961,724,058	35.1
1934	18,793,610,146	10.8
1935	21,548,700,173	14.7
1936	24,132,870,000	8.9

GROWTH OF DEMAND FOR POWER FOR LIGHTING

Year	No. of Consumers	No. of Lamps	Candle-power	Electric Power
1926	10,165,739	30,159,042	547,918,369	683,584
1927	10,547,235	32,322,991	605,604,846	736,169
1928	10,847,432	33,909,420	656,348,698	797,458
1929	11,170,618	35,893,353	704,634,862	863,046
1930	11,352,372	36,839,607	728,869,987	887,703
1931	11,446,539	37,413,988	782,340,943	959,144
1932	11,530,440	38,048,413	799,183,116	978,846
1933	11,383,235	38,382,771	810,000,000	990,000
1934	11,715,694	40,532,219	—	—
1935	11,948,953	42,477,828	—	—
1936	12,176,098	44,405,699	—	—

ELECTRIC LIGHTING IN VARIOUS PREFECTURES AT THE END OF 1935

(Number of lights per 100 persons)

Prefecture	No.	Prefecture	No.	Prefecture	No.	Prefecture	No.
Tokyo	123.8	Yamanashi	38.4	Osaka	87.4	Hiroshima	61.9
Kanagawa	87.2	Aichi	70.6	Kyoto	125.6	Tottori	47.8

Prefecture	No.	Prefecture	No.	Prefecture	No.	Prefecture	No.
Saitama	43.4	Miyé	50.3	Hyogo	83.0	Shimane	50.0
Gumma	45.4	Gifu	54.3	Nara	64.7	Okayama	60.8
Chiba	40.6	Nagano	49.3	Shiga	57.0	Yamaguchi	55.8
Ibaraki	27.9	Fukui	75.4	Wakayama	59.4	Kagawa	50.6
Tochigi	35.7	Ishikawa	70.7	Tokushima	44.0	Ehime	47.2
Shizuoka	57.0	Toyama	58.5	Kochi	45.1	Kumamoto	51.2
Nagasaki	38.9	Miyazaki	39.7	Niigata	50.4	Yamagata	36.4
Fukuoka	57.4	Kagoshima	29.0	Fukushima	31.5	Akita	29.9
Oita	54.9	Okinawa	6.8	Iwaté	26.0	Hokkaido	37.7
Saga	48.0	Miyagi	40.2	Aomori	37.2	Average	61.3

POWER SUPPLY COMPANIES

Year	Generating Water	Steam	Purchasing	Total
1931	Opened	305	45	385
	Unopened	5	7	28
	Total	310	52	411
1932	Opened	366	59	391
	Unopened	8	5	21
	Total	374	64	412
1933	Opened	345	56	417
	Unopened	7	3	15
	Total	352	59	433
1934	Opened	331	60	413
	Unopened	11	3	12
	Total	342	63	425
1935	Opened	319	59	410
	Unopened	12	3	15
	Total	331	62	425
1936	Opened	307	64	396
	Unopened	13	7	14
	Total	320	71	410

PROFITS OF ELECTRIC INDUSTRY

Year	Paid-up Capital	Profit	Rate of Profit against Paid-up Capital
	(In Yen)		
1926	2,453,588,000	279,331,000	11.0
1927	2,677,153,000	279,541,000	10.5
1928	2,868,717,000	282,880,000	10.0
1929	3,019,222,000	301,900,000	10.0

CONSUMPTION OF ELECTRIC POWER BY INDUSTRIES

(Compiled by the Ministry of Communications)

(In 1,000 kw. h.)

	1932	1933	1934	1935	1936
Fibre Industry	1,103,153	1,254,846	1,424,818	1,689,579	1,802,421
Mining	976,184	1,157,110	1,296,205	1,440,458	1,686,286
Metal Industry	519,850	630,107	1,200,700	1,666,182	2,219,902
Machine and Tool Manufacturing	152,621	217,102	292,408	373,872	466,498
Chemical Industry	2,896,845	2,415,964	4,044,205	5,051,275	5,895,349
Ceramic Industry	459,564	537,380	587,993	745,254	822,819
Foodstuffs	60,166	71,244	74,819	99,171	122,051
Others	179,243	222,690	243,220	314,536	350,400
Total	6,347,566	7,506,443	9,264,568	11,380,327	13,265,696

Capacity of Power Plants in 1936
The total power generated by power plants in 1936 was 6,777,422 kw., 85 per cent of which was supplied for

industrial purposes, and 15 per cent was consumed by the plants themselves. Hydro-electric power generated represented 55 per cent and thermal-

Year	Paid-up Capital	Profit	Rate of Profit against Paid-up Capital
	(In yen)		
1930	3,160,810,000	255,800,000	8.0
1931	3,234,181,000	227,061,830	7.0
1932	3,326,834,000	195,887,000	5.9
1933	3,494,202,000	183,100,000	5.2
1934	3,956,686,518	205,005,470	5.2
1935	4,124,389,526	225,730,583	5.5
1936	4,296,016,000	239,414,000	6.3

Electricity in 1936 and 1937

The progress of the electric light and power industry in Japan has been remarkable, especially in the last few years on account of the Governmental policy of expansion of heavy industries which has inevitably led to a corresponding increase in the supply of electric power. The consumption of electric power by the heavy and chemical industries has increased remarkably representing over 50 per cent of the total consumption of electric power for industrial purposes. According to the report of the Department of Communications the consumption of electric power by the various industries in 1932-36 was as follows:

electric power 45 per cent. The rate of increase in the past 10 years was 65 per cent in the total, 78 per cent in hydro-electric power, and 115 per cent in thermal-electric power.

CAPACITY OF POWER PLANTS IN JAPAN PROPER

(At the end of 1936)

(In kw.)

Description of Power Plants	Supplied to Others	For Self Consumption	Total
Total hydro electric	5,246,966	169,642	5,436,608
Completed	3,651,547	107,787	3,759,334
Under Construction	1,595,419	61,855	1,677,274
Total thermal-electric	2,441,211	865,742	3,306,953
Completed	2,125,036	799,742	2,924,778
Under Construction	316,175	66,000	382,175
Total internal combustion	17,470	84,245	101,721
Completed	17,389	75,921	93,310
Under Construction	87	8,324	8,411
Total	7,705,653	1,139,629	8,845,282
Completed	5,793,972	983,450	6,777,422
Under Construction	1,911,681	156,179	2,067,860

Electric Lights Electric lighting facilities were available in all the 11,500 towns and villages in Japan proper, except in 199 small villages located in the remotest districts and lone islets. The number of electric lamps installed by the end of 1936 was 44,405,629, an increase of 1,927,871 or 4.5 per cent over the previous year. This figures out at 63 lamps per 100 of population.

Electric Power Consumed in 1936 The demand for electricity, both for lighting and for power, grew steadily during the year, the volume utilized for the various industrial purposes in 1936 reaching 4,899,377 kw., an increase of 154 per cent in the past 10 years, and 49 per cent in the past 5 years.

ELECTRIC POWER CONSUMED IN 1936 BY KINDS OF INDUSTRY

	kw.	Percentage
Fibre and Textiles	647,477	13
Metal Works	876,988	17
Machine and Tool Mfg.	286,924	6
Ceramic Industry	335,292	7
Chemical Industry	1,033,190	22
Saw mills and Timber Works	170,825	3
Printing and Book-binding	26,023	1
Foodstuffs	337,984	6
Miscellaneous	78,470	2
Mining	380,165	8
Agriculture and Fisheries	88,699	2
Others	637,337	13
Total	4,899,377	100

The total consumption of electric power in 1936 was 24,132,870,000 kw. h. According to the statistical year-book of the League of Nations, Japan occupies the third position among the important consumers of electric power in the world, surpassed only by the United States and Canada.

Business Results The total amount of the authorized capital of the electric power supply companies in Japan proper in 1936 reached ¥5,491,000,000 an increase of ¥288,000,000 over the previous year. Shares and loans amounted to ¥2,199,000,000, corresponding to 52 per cent of the paid-up capital and 37 per cent of the fixed assets. The profit amounted to ¥289,000,000 or 6.8 per cent on the paid-up capital. Of the 820 companies 4 per cent were able to pay over 10 per cent dividend, 35 per cent over 5 per cent dividend, the companies which paid dividends numbering 62 per cent.

Activities in China With the progress of the China Affair the electric power companies of Japan found new fields for their activities and are extending their operations to those parts of China where peace has been restored. The Japan Electric Power Suppliers' Association has established the North China Electric Development Company with an authorized capital amounting to ¥5,000,000 (one-fourth paid-up) for supplying electric power to the Tientsin district with the present capacity of 30,000 kw. The proposed plan for North China is to increase the capacity to 100,000 kw. with a capitalization of ¥50,000,000.

For the reorganization of electric power business in Central China the five largest electric power companies of Japan are going to form an association in accordance with the Governmental plan to supply power to Shanghai and Nanking districts, and engineers have been sent to make a thorough investigation there.

State Control of Electric Power The problem of State control of electric power has been a subject of discussion for several years past among the persons directly concerned, and the project was put to a most careful examination, in view of the vastness of the sphere involved, before it was framed into a bill and passed by the 73rd Diet.

For several years past this project sponsored by the Government had met with vigorous opposition from experts and electric power companies both in and out of the Diet house and the project seemed to have arrived at a deadlock. In the meanwhile the situation at home and abroad had developed to such a stage that the Government found it necessary to strengthen its control on many industrial and commercial enterprises, and the power control was taken up once more as one of the most important measures for consolidating national life. The Konoé Cabinet commanded the implicit confidence of the whole nation and the country looked to it for the solution of many a pending problem. Communications Minister Ryutaro Nagai had been one of the ardent advocates of the State control of electric power for years and he immediately took up the problem and ordered the formation of the Extraordinary Commission for Enquiry into Electric Power Problem. On October 13, 1937, the Commission was organized under the presidency of the Minister of Communications with 33 members, including 4 Government officials, 3 members of the House of Peers, 8 members of the House of Representatives, 5 big electric power owners, 3 representative consumers, 5 bankers, and 5 electric experts. The Commission submitted its final recommendations on November 19, after the conclusion of its deliberations lasting for a month. The Government approved the report and framed on its basis the electric Power Control Bill and placed it before the Diet session on January 25, 1938. The bill was passed, on March 26, after heated debates between the two sides and with amendments on several important points, accompanied by revisions of ex-

isting laws relating to electric industry and commerce.

The purpose of the State control of electric power is stated in Article I of the newly enacted law as follows: Generation and transmission of electric power shall be controlled by the Government in order to supply more abundant volume of electric power and at cheaper prices so as to make it more easily available to the people. Article II states that the State control of electric power is to be carried out through a new semi-Governmental corporation.

The new concern is called Nippon Has-So Den Kabushiki Kaisha (Japan Electric Power Generating and Transmitting Joint Stock Company). The Company will have under its control (a) all the important new equipment to be installed for generating hydro-electric power as well as the existing equipment which cannot be dispensed with for rational utilization of water power resources, (b) important thermal power plants and (c) important equipment for power transmission.

The State power control will not be extended over water power resources already developed, inasmuch as the volume of water utilized for the purpose of generating power by the existing plants is more or less fixed and no measure of control is felt necessary other than that of transmission lines for the full utilization of these resources. But equipment such as that used for the purpose of generating a supplementary supply of power, and the hydraulic equipment already in operation which must be radically reconstructed in order to ensure better and more complete utilization of resources will come under State control.

All the new equipment coming within the scope of State control shall be operated by the new company, and plants which are already in operation shall be placed under the management or direction of the new company. The hydraulic electric power generated by the existing plants shall be sold to the new company, which will have the lines to transmit it to the distributors.

In carrying out the control measures, important matters relating to supply and demand, plans for the construction of the generating and transmitting equipment are to be decided on by the Government on the basis of the recommendations submitted by the Electric Power Council which is to be created with a membership including the most skilled technicians and ex-

perienced administrators, the execution of the plans and the actual operation of business being left to the new company. The new company will be given governmental assistance in raising funds and guaranteeing dividends, and will be awarded a reduction of or exemption from taxes and such other privileges necessary for business operation. The officers of the company are to be appointed by the Government; all additions to or alterations in the laws relating to the company, the issuance of debentures, the disposition of profits and other important matters are to be carried out with the approval of the Government, which will also issue orders relating to the business management of the company.

In enlarging the scope of power distribution, a rearrangement and co-ordination of areas shall be effected. Improvement of business conditions and a more extensive use of power all over the country are among the objects aimed at by the Government. For the purpose of lowering and equalizing the rate of distribution Governmental supervision shall be augmented.

A fair quantity of surplus power shall be kept in store at all times in preparation for emergencies and reserve equipment shall be properly arranged. Power generated for private use will also be subjected to State control to a certain extent. With a view to ensuring the supply of power and meeting the immediate needs the measure for control of consumption will be carried out according to the requirements of the circumstances.

Proposed Plan of the Nippon Has-so Den Kabushiki Kaisha The proposed plan of the new semi-Governmental electric company revealed by the Government on February 7, 1938 at the special committee of enquiry on the power control bill of the House of Representatives is as follows:

1. The company shall be capitalized at ¥880,000,000, of which ¥750,000,000 shall be obtained through conversion of the fixed assets and rights of the existing companies and equipment and the

new equipment to be installed in the first 2 years of the establishment of the company. The remaining ¥100,000,000 shall be raised from among the general public.

2. The construction plan of the company includes the establishment of the following plants over a period of ten years: Hydraulic generating plants with a capacity for 3,200,000 kw.; Thermal generating plants with a capacity for 4,500,000 kw.; Transmission lines 13,000 km.; Transformer stations for 10,400,000 k.v.a. The expenses for the construction of the new plants and stations will amount to ¥1,890,000,000 during the 10 years after the establishment of the company in accordance with the 10-year programme.

Business Plan When the 10-year programme is complete the company will be able to supply electric power to the quantity of 7,300,000 kw. or over 45,000,000,000 kw.h. The income will be ¥525,640,000; the expenditure ¥446,990,000; net profit 79,650,000; dividend ¥60,200,000 (at 7 per cent); and reserves ¥19,450,000.

The capacity of generating and transmitting power will be as stated in the construction plan mentioned above in addition to 3,500,000 kw. of purchased electric power. The fixed assets of the company will be ¥2,670,000,000.

Electric Industry Enters New Period The electric power industry in Japan in which approximately ¥6,000,000,000 has been invested, is going to enter a new period by the enforcement of the State Electric Power Control Law. The "Big Five" electric companies, i. e. the Tokyo Electric Light, Toho Electric Power, Daido Electric Power, Nippon Electric Power and Ujigawa Electric Power, will henceforward confine themselves to selling their hydraulic electric power to the new company which will be in charge of distribution. The aggregate value of their fixed assets to be transferred to the new company as investment is estimated at ¥484,000,000 or 20 to 30 per cent of their total fixed assets according to the company.

Gas Industry

Introduction

When compared with the electric industry, the gas industry has been very slow in its development. The introduction of gas took place in 1885, when it was used in Yokohama for street lighting purposes, later in the same

year Tokyo adopted it for the same purpose. The capital invested in 1885 was ¥54,000, and a slow but steady increase took place until 1925, when the invested capital stood at ¥276,373,000. After that year the industry made great strides as the following figures show:

	Material Consumed		Supply		Consumption		
	Coal	Output	Amount Supplied to Consumers	No. of Consumers	Motors		Horse-power
					No. of Lights and Burners	Number	
	Metric ton	Thousand cubic metres	Thousand cubic metres				
1932	1,283,216	734,188	712,717	1,785,205	3,921,620	437	12,517
1933	1,402,000	770,447	709,967	1,866,369	4,145,549	476	13,947
1934	1,461,000	1,046,639	741,787	1,906,409	4,242,215	528	42,485
1935	1,522,000	1,219,746	771,534	1,995,000	4,453,919	529	41,777
1936	1,614,000	858,965	810,095	2,112,000	5,771,537	548	45,021

BUSINESS RESULTS OF GAS COMPANIES

(In ¥1,000)

March	Paid-up Capital	Fixed Capital	Profit	Percentage of Profit against Fixed Capital	Dividend Rate
1930	350,232	459,686	48,874	9.2%	9.6%
1931	382,930	555,614	50,896	9.0	6.7
1932	395,632	571,564	51,452	8.7	8.3
1933	400,908	580,053	50,317	9.1	8.0
1934	419,096	584,323	53,029	9.1	7.8
1935	440,210	585,998	60,295	13.6	7.6
1936	458,196	591,637	70,302	11.9	7.8
1937	460,403	608,919	78,232	12.8	8.4

Gas Industry in 1937

At the beginning of 1937 the gas companies in operation numbered 111, and those which were about to be launched out numbered 10. The former

had increased by 3 while the latter had decreased by an equal number as compared with the previous year. The business conditions of these gas concerns were as follows:

BUSINESS CONDITIONS OF GAS INDUSTRY IN 1937

(In ¥1,000)

Producers	Authorized Capital	Paid-up Capital	Loans	Reserves	Working Expenditure
Six big municipalities	271,395	195,110	18,113	19,737	230,419
Other municipalities	62,368	38,152	6,696	4,246	44,687
Private companies	295,884	227,140	141,898	117,769	13,279
Total	629,647	460,402	176,707	222,752	288,385

The authorized capital increased by ¥8,257,000 and the paid-up capital by ¥2,207,000 over the previous year.

The volume of gas supplied in 1937 reached 810,095,000 cubic metres, an increase of 4.9 per cent over the previous year. The aggregate income amounted to ¥186,904,000 against ¥108,645,000 of disbursement, increasing ¥15,766,000 (9.2 per cent) and ¥7,966,000 (7.9 per cent) respectively over the previous year. The average rate of dividend was 8.4 an increase of 0.6, and had a balance of ¥7,000,000 which was carried over to the first half of 1938. The reason for better business conditions in 1937 is to be found in the unprecedented activity

of the heavy industries during the year, the prosperity of the gas industry being more noticeable in the larger cities.

The principal material being used for the production of gas is coal, but coke and oil are also used to a considerable extent. The use of the best kind of coal is indispensable both for gas production itself and for obtaining the best coke. The coal used by the gas producers in Japan proper is mined mostly in the Japanese islands. Coke used for various purposes in gas industry in a year is estimated at about 245,000 metric tons. The amount of coal consumed for the production of

gas as well as coke in 1937 was estimated at 2,243,000 metric tons.

The by-products such as coke, coaltar, and chemicals, are numerous and are increasingly demanded by various other industries. The future of the gas industry, therefore, is bright and may

undergo a considerable readjustment in scope and extent. But the revenue for the industry through supplying gas to private homes cannot be expected to increase because of the strict price-control effected by the Government in the interest of people's economy.

Warehousing

History

Since warehousing depends on the storing of large quantities of goods, transportation facilities are the factors which influence its success, an expansion of one calls for an expansion of the other and, in Japan, it was the development of transport facilities in the days of Meiji which gave rise to the modern warehousing business.

Warehouses of kinds have always existed. Emperors in olden times kept rice and cereals in warehouses for military purposes. Later, cereals were kept to provide for relief of the people in case of poor crops, but in either case, the warehouses were used for military or political, not commercial, purposes. When the Tokugawas came to rule the country as Shoguns about three hundred years ago, both Yedo (present Tokyo) and Osaka became great cities where trade and commerce flourished. Transportation by sea developed, and many feudal lords came to reside in these cities, bringing with them, or having sent to them, the agricultural products of their country districts. The produce was stored at the lords' residences, which became, in a sense, public warehouses. The produce was sold by public tender and to the successful bidder a memorandum was given against receipt of payment in cash. This memorandum was equivalent to the warehouse receipt of the present day, and the holder of the memorandum was authorized to keep his cereals in the warehouses for the time stipulated on it. Loans were often raised with memoranda as collaterals.

After the Restoration, owing to de-

velopment of commerce and activity in the movement of goods, many warehouse businesses were started, the first company, to operate on a modern basis being the Soko Kaisha in Fukagawa, Tokyo, established in 1881 with a capital of ¥65,000. Dissolution took place 3 years later. In Osaka, the Konoike family organized the Osaka Soko Kaisha with a capital of ¥200,000 in 1882. In 1883, the Sanbashi Kaisha in Kobe, and in 1884, the Otsu Soko Kaisha in Otsu in Shiga prefecture, were established. In 1886, the Tokyo Soko Kaisha, Ltd., was founded by the Iwasaki family. After that year there was no great change until after the Sino-Japanese War, when with increased foreign trade and improved transportation facilities by land and sea, the number of warehouse companies rapidly increased. In 1906, there were 536 people engaged in the warehouse business, either on private account or on an incorporated basis.

Present State of the Business

At the end of 1937 the number of warehouses managed by the member companies of the Japan Warehouse Association was 183, the value of commodities stored, being, on the average throughout the year, ¥807,692,000. According to an investigation made by the Department of Commerce and Industry, the number of warehouse managements in the country totalled 463, capitalized with ¥166,570,763, and profit gained ¥4,835,570 in 1936.

Value of Commodities. The values of commodities stored in the warehouses were as follows:

STOCKS IN WAREHOUSES IN JAPAN PROPER

(According to the Japan Warehouse Association)

Year	Warehouses	Average		End of June		End of December			
		1,000 Parcels	Value ¥1,000	Warehouses	1,000 Parcels	Value ¥1,000	Warehouses	1,000 Parcels	Value ¥1,000
1920	99	20,105	500,294	100	18,467	519,851	99	19,960	471,490
1929	98	22,295	497,371	99	23,272	533,403	97	22,299	473,253
1930	98	23,691	483,436	99	24,866	603,941	97	21,270	356,844

UTILITIES

Year	Average		End of June		End of December				
	Ware-houses	1,000 Parcels	Value ¥1,000	Ware-houses	1,000 Parcels	Value ¥1,000	Ware-houses	1,000 Parcels	Value ¥1,000
1931	96	22,322	432,715	96	22,113	458,917	96	24,134	410,922
1932	97	26,732	510,957	98	29,712	546,683	98	23,134	406,144
1933	101	27,041	577,555	99	28,901	629,965	105	28,892	585,065
1934	107	37,467	719,276	108	40,208	775,846	107	33,016	661,009
1935	108	31,750	645,913	107	33,449	686,155	111	27,284	537,209
1936	127	29,461	614,381	114	30,935	683,639	155	26,026	539,625
1937	173	33,020	807,692	175	34,045	936,759	183	33,550	722,408

Stocks in Warehouses by Districts

Year	Tokyo-Yokohama District			Kobe-Osaka District			Other District		
	Ware-houses	1,000 Parcels	Value ¥1,000	Ware-houses	1,000 Parcels	Value ¥1,000	Ware-houses	1,000 Parcels	Value ¥1,000
1928	19	4,644	130,908	13	7,821	226,993	67	7,494	113,567
1929	19	5,590	153,982	14	9,603	214,872	64	7,105	104,395
1930	19	4,825	144,265	14	9,099	146,342	64	7,345	68,236
1931	19	6,020	159,453	14	9,581	164,500	63	6,532	87,023
1932	20	6,782	182,114	14	8,849	213,263	64	7,492	90,765
1933	21	7,337	187,227	14	11,350	270,406	70	10,204	127,451
1934	21	8,770	202,333	14	10,670	297,127	72	13,575	162,293
1935	20	6,314	165,953	16	8,339	217,798	75	12,630	154,158
1936	24	5,808	134,335	19	7,913	254,411	112	12,305	149,837
1937	24	6,054	126,143	21	9,822	302,009	138	17,674	234,256

STOCKS IN WAREHOUSES BY IMPORTANT COMMODITIES

(In 1,000 parcels)

At the end of	1928	1929	1930	1931	1932	1933	1934	1935	1936	1937
Rice	6,803	6,311	4,188	10,386	9,966	14,381	18,630	9,714	6,525	7,723
Other Cereals and Flour	1,399	1,335	1,186	1,741	1,384	2,118	2,267	2,870	2,070	3,804
Sugar	674	842	894	1,597	2,637	2,156	818	910	1,011	1,429
Foodstuffs	2,592	2,439	4,443	1,911	1,464	1,493	2,373	2,776	3,014	3,264
Cocoon	330	338	247	269	246	338	218	211	298	363
Cottons	237	143	103	93	242	368	383	127	303	149
Wool, etc.	69	67	23	75	115	153	126	139	77	114
Yarns	126	158	240	309	212	194	223	245	173	507
Textiles	193	213	158	219	165	305	301	1,162	362	961
Paper and Materials	996	985	1,233	1,022	541	418	680	810	720	710
Fertilizers and materials	2,133	3,530	3,882	3,026	2,400	1,959	1,610	2,127	2,350	2,724
Iron and Manufactures	1,894	2,849	2,516	1,856	1,603	3,303	2,809	3,452	3,026	5,827
Cemicals Dyestuff, Fats	741	700	615	605	470	472	572	914	1,181	1,017
Total	19,960	22,299	21,270	24,134	23,134	28,892	33,016	27,284	26,026	33,220

(Value in ¥1,000,000)

At the end of	1928	1929	1930	1931	1932	1933	1934	1935	1936	1937
Rice	83.8	75.6	29.0	77.2	86.7	122.3	196.2	108.7	75.3	89.5
Other Cereals and Flour	13.4	10.6	7.1	6.4	14.8	9.5	15.3	19.3	27.9	36.6
Sugar	12.5	15.8	14.2	22.2	46.9	39.5	12.4	15.1	15.3	20.9
Foodstuffs	19.2	23.1	24.5	24.0	21.0	18.1	30.7	35.4	32.5	43.0
Cocoons	24.6	25.7	10.4	10.6	15.2	18.2	9.6	15.2	17.2	20.1
Cotton	44.5	22.7	14.5	9.6	46.1	63.1	62.7	22.8	68.3	22.4
Wool, etc.	18.2	3.9	3.0	21.6	43.9	35.1	37.2	21.1	22.2	41.2
Yarns	66.4	84.5	103.1	119.2	126.6	123.3	115.8	102.3	77.3	103.4
Textiles	55.0	48.1	23.4	24.9	21.1	44.2	45.1	49.4	43.9	81.4
Paper and Materials	41.6	44.5	49.5	42.6	29.0	22.2	25.5	31.3	29.6	21.9
Fertilizers and Materials	12.2	19.5	15.7	17.0	12.7	7.6	6.6	9.0	13.5	19.3
Iron and Manufactures	22.4	32.7	24.7	17.1	14.6	27.4	22.6	36.0	34.9	73.0
Cemicals Dyestuff, Fats	17.9	18.1	12.7	10.7	9.3	13.7	12.9	17.5	21.4	22.8
Others	33.0	33.3	23.6	21.0	20.1	26.5	33.7	37.3	48.2	89.7
Total	471.4	473.2	356.6	410.9	466.1	585.0	661.8	537.0	539.6	722.4

CHAPTER XXI

FOODSTUFFS

Wheat Flour

Historical Survey

Before the Russo-Japanese War It was not until after the Russo-Japanese War (1904-5) that the wheat flour industry made any progress in Japan. Prior to the war there was a fairly large consumption, but manufacturing was only in the infant stage, most of the production being with the help of water-wheels. The daily output by this method was only 10 to 50 or 60 bags; the quality was poor and not uniform and, being packed in straw bags, the product was not at all satisfactory. It was only in the year 1895 that wheat flour was first produced on a modern basis by machinery. In that year, the Nippon Seifun Kaisha, Ltd., began to operate mills with a capacity of 200 koku per day, and gradually, mills with capacities of 50 to 100 koku a day were established, but progress was very slow. However, the demand for flour increased and as production could not keep pace with it imports naturally increased. In 1895, imports were 280,000 bags, valued at ¥400,000, ten years later imports had increased to 4,990,000 bags, valued at ¥9,350,000. Imported and water-mill produced domestic flour together satisfied practically the whole of home consumption, while domestic flour made by machinery formed but a very small part of the supply. The imported flour coming chiefly from the United States of America, was of a far superior quality to the home product.

Yield of Wheat Before 1901, the land used for wheat planting averaged between 440,000 and 480,000 cho, and in 1905, it was 450,000 cho. The yield of wheat gradually increased up to 1901, when it was 4,370,000 koku, but during the next few years there was a gradual decrease until in 1905 the yield was 3,600,000 koku.

As regards imported wheat, the amount imported usually depended upon the domestic wheat crops, but showed in general a gradual increase. In 1895 imports were only 1,000 koku with a value of ¥7,500. In 1902 they had increased to 33,000 koku, valued at ¥240,-

000. The year 1903 proved to be a lean year for domestic wheat, and imports suddenly increased to 560,000 koku, of a value of ¥4,760,000. After that, owing to the prosperity which visited Japan after the war with Russia, wheat continued to be imported in large quantities. In 1904 it was 170,000 koku, valued at ¥1,530,000, and in 1905, 450,000 koku, valued at ¥4,000,000.

After the Russo-Japanese War Many flour mills were established on a modern basis during the time of the great boom which followed the Russo-Japanese War, and production capacity was greatly expanded, but a contraction was brought about by the closing down of many of the newly established mills when the reaction later set in. In 1914, when the World War started the capacity of production by machinery was 9,060 barrels and this, by 1922, had increased to over 20,000 barrels. During those seven years the industry experienced unprecedented prosperity, and with this development on modern lines, domestic producers who make flour in the old-fashioned way have lost nearly all their customers and, further, imported flour has been practically shut out of the country.

The Industry at Present

Production and Imports of Wheat After 1918 the demand for wheat flour, keeping pace with the advance in the standard of living, greatly increased. The extended westernization of the country in recent years largely accounts for this and has brought about a consequent heavy demand for wheat. Home production has not increased to meet the demand, the result being, as the following tables show, heavy annual importations of wheat. An attempt, therefore, has been made by the Government to increase domestic production through tariff and increase of wheat acreage, in which they were highly successful. The production increased very much in 1933 in proportion to the increased acreage, which was further accelerated in 1935, when an all-time record high was established. The pro-

duction in 1936 decreased by 7.2 per cent as compared with the preceding year. But, 1937 production recorded highest in the history with 9,996,048 koku.

PRODUCTION OF DOMESTIC WHEAT AND ITS ACREAGE

Year	Production koku	Acreage cho
1928	6,389,000	489,000

Year	Production koku	Acreage cho
1929	6,323,000	494,000
1930	6,124,000	491,000
1931	6,405,000	501,000
1932	6,497,000	508,000
1933	8,013,000	616,000
1934	9,450,700	648,000
1935	9,655,824	663,868
1936	8,961,329	688,959
1937	9,996,048	724,602

QUANTITIES OF WHEAT IMPORTED

Countries from Which Imported

(Quantities in piculs)

Year	China	U.S.A.	Canada	Australia	Other Countries	Total	Value (In 1,000 yen)
1931	23	884,210	2,597,625	8,554,294	3,379	12,039,531	32,935
1932	—	195,634	1,983,110	10,264,635	54	12,443,434	49,572
1933	—	49,367	1,874,606	6,593,331	3,165	8,520,470	44,384
1934	17,820	2,220,803	1,325,549	4,455,025	135,864	8,155,061	40,748
1935	3,000	45,994	881,786	5,558,084	928,436	7,417,300	43,199
1936	320,470	61,818	164,000	2,812,000	376,360	3,734,700	33,650
1937	250,000	18,860	65,500	1,679,000	493,000	3,122,000	29,604

EXPORTS OF WHEAT FLOUR

Countries to Which Exported

(Quantities in piculs)

Year	Manchoukou	China	Kwantung Province	Dutch East Indies	Others and Total	Value (In 1,000 yen)
1931	—	1,684,775	490,162	14,068	2,252,011	9,517
1932	858,103	1,049,163	2,572,327	5,998	3,694,883	20,539
1933	1,427,036	482,700	803,963	14,068	5,304,249	34,955
1934	1,402,032	17,133	2,899,819	8,988	4,427,819	28,451
1935	2,035,048	29,123	2,366,348	10,323	4,819,629	33,699
1936	736,400	89,900	1,065,800	19,500	2,165,300	17,621
1937	231,900	1,283,300	1,047,500	9,700	2,683,000	30,745

FLOUR PRODUCTION, CONSUMPTION, ETC

(In bags)

Year	Production	Import	Export	Home Consumption and in Stock
1924	32,676,000	392,000	508,000	32,560,000
1925	36,483,000	205,000	3,101,000	33,588,000
1926	38,349,000	338,000	4,551,000	34,216,000
1927	36,701,000	897,000	3,379,000	34,220,000
1928	42,478,000	374,000	6,433,000	36,420,000
1929	43,159,000	314,000	8,271,000	35,203,000
1930	40,962,000	877,000	5,396,000	36,443,000
1931	42,088,000	258,000	6,080,000	36,266,000
1932	41,989,000	112,000	9,976,000	32,125,000
1933	41,395,892	40,246	14,321,472	26,114,666
1934	46,084,000	45,400	11,966,000	34,175,000
1935	49,700,000	93,000	13,026,000	36,767,000
1936	38,993,000	101,000	5,852,000	33,242,000
1937	38,000,000	410,000	7,251,000	31,159,000

Flour Industry in 1937

The wheat flour industry which had been dull in the first half of 1937 was quickened into activity in the second half. During the first half of the year the productive power of flour mills had increased both in Japan proper and Chosen, and the flour industry in Manchoukou made rapid advance toward meeting the domestic need and the exports from Japan fell off as a consequence. The occurrence of the China Affair in July and the restoration of peace in North China greatly stimulated the exports of wheat flour of that area, Japanese flour taking the place of Shanghai flour, and so great was the demand that the stock in Japan proper was soon going to be wiped out.

Exports to China The highest record of Japanese flour exports was 14,321,000 sacks in 1933. It dwindled to 5,852,000 sacks in 1936 or less than a half of 1935. The sudden decrease was due to the loss of markets in Manchoukou, China and Kwantung Leased Territory. The exports to Manchoukou continued to increase since the founding of the State in 1932 till 1935 when it amounted to 5,490,000 sacks representing 42 per cent of the total exports of flour in that year. But in 1936 the Manchoukou Government imposed a tariff on the importation of the commodity for

the protection of flour industry in that country and her own production increased so that Japan's exports of flour to Manchoukou decreased by 3,500,000 sacks in that year. In 1937, Manchoukou bought only 626,000 sacks or about one-third of the previous year. The flour exports to Kwantung Leased Territory once accounted for 63 per cent of the total, but the figure dwindled to 39 per cent in 1937.

China, especially North China, was the best customer of Japanese wheat flour in former years. In 1928 China (Manchuria excluded) bought 3,480,000 sacks or 54 per cent of Japan's total exports of flour in that year. In 1934 the exports dwindled to 46,000 sacks on account of high tariff barriers set up by China after the Manchurian incident. The shipments increased in the following years, however, and in 1936 they amounted to 243,000 sacks or three times as much as in the previous year. But the figure was less than 10 per cent of that for 1928.

In 1937 the former position of China as the best customer of Japanese flour was restored, her purchases amounting to 3,465,000 sacks. One of the main causes of this sudden increase was the stoppage of the domestic supply of wheat in the Chinese market as a result of the present hostilities.

EXPORTS OF WHEAT FLOUR BY COUNTRIES

(In 1,000 sacks)

	1933	1934	1935	1936	1937
China	1,303	46	79	243	3,465
Kwantung L. T.	8,960	7,830	6,389	2,878	2,828
Manchoukou	3,853	3,785	5,495	1,989	626
Others and Total	14,321	11,953	13,013	5,846	7,244

MONTHLY EXPORTS OF WHEAT

FLOUR IN 1936 and 1937

(In 1,000 sacks)

	1936	1937
January	509	282
February	428	255
March	650	292
April	717	309
May	649	228
June	578	258
Total for the first half	3,531	1,624
July	287	266
August	241	289
September	200	1,005
October	487	1,066
November	669	1,402
December	431	1,592
Total for the second half	2,315	5,620
Total for the year	5,846	7,244

Production in 1937 The production of wheat flour in 1937 amounted to 34,518,000 sacks, a decrease of 1,193,000 sacks from the previous year. The decrease is due to a large amount left in stock, although production showed a gain in the last quarter on account of the disposition of the stock and the increased demand in North China.

The price was high all through the year with the rise in price of wheat, and fluctuated between ¥4.53 and ¥5.14 per sack ["yuri" (lily) mark].

Production and Imports of Wheat The Government project of increasing the wheat production in Japan to 9,000,000 koku under a 5 year programme beginning with 1932 had been realized in 1934, and the production rose to 9,996,-

000 koku in 1937, an increase of 1,034,000 koku or 11.5 per cent over the previous year and 1,480,000 koku or 17.4 per cent over the average for the preceding 5 years. With the increase in

domestic production, imports have been steadily decreasing, the quantity imported in 1937 being 1,370,000 koku valued at ¥29,604,000.

SUPPLY AND DEMAND OF WHEAT IN JAPAN PROPER

(Compiled by the Ministry of Agriculture and Forestry)

(In 1,000 koku)

Wheat Year (July-June)	Domestic Production	Imports from Foreign Countries	Imports from Colonies & Dependencies	Exports to Foreign Countries	Exports to Colonies & Dependencies	Consumption in Japan Proper ¹	Per Capita Consumption (koku)
1927-28	6,056	4,350	5	943	619	8,848	0.143
1928-29	6,389	5,627	0	2,108	605	9,303	0.148
1929-30	6,323	3,817	46	1,057	501	8,538	0.134
1930-31	6,124	5,054	5	1,557	540	9,087	0.141
1931-32	6,405	5,980	6	1,486	543	10,363	0.159
1932-33	6,497	3,758	129	2,954	530	6,900	0.106
1933-34	8,013	3,305	149	2,505	540	8,586	0.129
1934-35	9,450	3,588	10	3,214	1,012	9,036	0.134
1935-36	9,656	2,990	84	1,855	1,027	9,848	0.114
1936-37	8,961	1,756	17	813	805	9,116	0.129

¹ Note: About 40% of the total is consumed in brewing and for other purposes.

History and Development

The art of making sugar was introduced from China about two hundred years ago, but no great progress is recorded in sugar manufacture until after the Restoration, and even then it remained as a farmers' sideline until the end of the Sino-Japanese War of 1894-5, when Formosa, well-known for its sugar production, was ceded to Japan by China. This marked a new era in the sugar industry. In 1896, a sugar refining company was organized in Osaka and from that time the industry began to develop.

The Government undertook to levy a duty on raw sugar in 1899, and, by successive steps, this duty has reached the present rate. In 1911, a tariff of a similar nature was imposed, for the first time, on refined sugar.

In view of the fact that Formosa is ideal both in temperature and rainfall for cane growing the Government decided to encourage the establishment of sugar mills in the Island. With this in view it established the Temporary Sugar Bureau as a branch of the Government of Formosa. The Bureau subsidized sugar companies in establishing sugar mills and purchasing required machinery. It imported cane seedlings and distributed them to cane growers. It gave, too, subsidies for the purchase of

fertilizers, and in various other ways succeeded in dispensing as subsidies, up to 1924, a sum amounting to more than thirteen million yen. As the result of these subsidies, the industry has developed to the present stage. In 1902, the production of raw sugar in Formosa was only about 600,000 piculs, but by 1931 this had increased to over 11,000,000 piculs.

In 1901, the Taiwan Sugar Co., Ltd., was organized. Raw sugar mills with all new machines were established and war was declared against the old-fashioned machines which were only able to produce raw brown sugar. Development was destined to be slow for the plantations and mills were subject to attacks from the native savages, but this difficulty was gradually overcome and during the prosperity that visited Japan after the Russo-Japanese War, many new companies were organized and the industry developed rapidly.

Present State of the Industry

The sugar industry in Shikoku, Kyushu, and the Loochoo Islands is making no headway, but that in Formosa is rapidly progressing, and at present it is the Formosan sugar that controls the sugar market in Japan. Refining is making good progress in Japan proper.

PRODUCTION OF SUGAR

(Unit 1,000 piculs)

Year	Formosa	Japan Proper	Hokkaido	Korea	South Sea Islands	Total
1924-1925	7,992	1,201	167	6	148	9,516
1925-1926	8,332	1,399	190	9	152	10,083
1926-1927	6,852	1,299	286	5	209	8,653
1927-1928	9,667	1,438	343	9	181	11,640
1928-1929	13,155	1,523	343	10	164	15,197
1929-1930	13,508	1,222	424	11	345	15,511
1930-1931	13,287	1,273	361	15	642	15,580
1931-1932	16,484	1,651	405	29	696	19,266
1932-1933	10,561	1,712	402	—	729	13,406
1933-1934	10,783	1,551	383	—	750	13,469
1934-1935	16,094	1,752	587	—	1,135	19,568
1935-1936	15,034	1,981	515	—	819	18,351
1936-1937	16,789	1,559	678	—	961	20,037
1937-1938*	16,700	1,517	694	—	1,627	20,602

* Estimate

SUGAR EXPORTS AND IMPORTS OF JAPAN PROPER

(Compiled by the Japan Sugar Institute)

(In piculs)

Year	Imports	Exports	Excess of imports(-) or exports(+)	Year	Imports	Exports	Excess of imports(-) or exports(+)
1928	7,081,896	4,450,909	(-) 2,630,987	1933	2,485,343	2,750,402	(+) 265,059
1929	4,343,394	3,769,576	(-) 573,818	1934	1,732,188	2,019,868	(+) 287,680
1930	4,569,617	4,101,426	(-) 468,191	1935	2,341,841	2,669,420	(+) 327,579
1931	3,505,168	3,236,023	(-) 269,145	1936	3,600,000	2,978,600	(+) 621,400
1932	711,060	2,598,219	(+) 1,887,159	1937	2,845,000	2,482,100	(-) 362,900

EXPORTS OF REFINED SUGAR BY DESTINATION

(In piculs)

Year	China	Manchou-kuo	Kwantung	Soviet Union	Hongkong	British India	Others	Total
1928	3,119,488	—	374,154	221,851	77,591	4,539	2,346	3,799,969
1929	2,370,585	—	547,469	93,354	168,130	31,259	1,140	3,220,937
1930	3,007,528	114,604	326,541	31,796	154,132	1,015	1,482	3,637,298
1931	1,895,667	88,922	370,810	57,433	208,996	363	—	2,622,211
1932	466,877	54,790	799,840	15,552	10,535	37,395	4,518	1,389,507
1933	901,525	96,703	1,015,941	81,312	15,547	41,337	19,952	2,172,317
1934	1,041,527	162,255	715,093	40,904	13,991	30,157	15,941	2,019,868
1935	1,481,898	227,389	792,578	8,115	35,216	63,673	60,344	2,669,213
1936	905,100	193,200	1,780,200	—	—	—	—	2,978,600
1937	1,159,300	216,000	1,001,800	—	—	—	—	2,482,100

Sugar Industry in 1937

The year 1937 was marked by great activity in sugar industry in Japan as a result of the restrictions on imports of foreign sugar, the conclusion of the international sugar treaty and the abolition of the sugar surtax. Despite the discouraging effect of the new regulations, necessitated by the emergency situation, the industry continued to be prosperous on the whole.

Production of Sugar in 1937 The production of sugar in the Empire in the sugar year 1936-37 totalled 20,037,000 piculs, exceeding the production of the preceding year by 1,700,000 piculs or 9.2 per cent. The production in 1937-38 is estimated at 22,126,000 piculs, which if realized will be a record production for Japan. The increase is accounted for by the expansion in sugar cane plantations and favourable weather conditions in 1937. If the weather

continues to be favourable till the crop is ready, the production will surpass the estimate.

PRODUCTION OF SUGAR IN THE EMPIRE BY AREAS

	(In 1,000 piculs)			
	1934-35	1935-36	1936-37	1937-38
Taiwan (white sugar)	15,711	14,672	16,457	17,760
.. (brown sugar)	382	347	332	435
South Sea Islands	1,135	819	961	1,282
Loochoo Islands (white sugar)	297	314	295	380
.. (black sugar)	1,072	1,225	892	1,060
Daito (white sugar)	70	115	100	119
.. (black sugar)	13	11	15	15
Others	302	311	253	272
Karafuto (beet sugar)	—	—	49	57
Hokkaido (beet sugar)	587	515	678	740
Total	19,569	18,329	20,037	22,121

IMPORTS OF REFINED SUGAR BY ORIGINS

Year	Java		Others & Total	Year	Java		Others & Total
	(In piculs)						
1928	6,230,002	6,350,922		1933	2,184,499	2,210,124	
1929	3,673,640	3,795,281		1934	1,727,188	1,732,188	
1930	4,072,494	4,077,603		1935	2,323,117	2,341,841	
1931	3,304,251	3,305,275		1936	3,396,900	3,600,000	
1932	644,927	671,299		1937	2,698,300	2,845,000	

SUPPLY AND DEMAND OF SUGAR IN JAPAN PROPER

(Compiled by the Formosan Government-General)

	(In 1,000 piculs)				
	1931	1934	1935	1936	1937
Production in Japan proper	2,118.7	1,946.1	2,316.8	2,505.2	2,237.4
Imports from foreign countries	2,210.1	1,732.1	2,341.8	3,600.1	2,845.0
Imports from territories	10,541.1	11,616.3	15,152.5	14,274.5	14,801.0
Exports to foreign countries	2,172.3	2,019.8	2,669.2	2,970.6	2,492.1
Exports to territories	162.3	211.4	227.9	591.6	604.9
Consumption in Japan proper	12,535.3	13,063.3	16,914.0	16,809.6	16,896.4
Consumption per capita	18.56	19.06	24.30	23.80	23.61

Price of Sugar The price of sugar in 1937 took a rising tendency in the first half and began to show a downward trend in the second half. The rise in the first half corresponded with the rise in the world market, and the highest quotation was ¥14.97 per picul on July 6. But the occurrence of the China Affair, the abolition of sugar surtax and the operation of the Anti-Profitteering Law lowered the price of imported sugar and the exchange quotation in the country in the months of July, August and September. A rising tendency became evident toward the end of the year due to the regaining of the Chinese market with the Japanese advance.

MONTHLY EXCHANGE QUOTATION ON SUGAR IN TOKYO IN 1937

	Highest	Lowest	Amount of Contract
	(In yen)		(In 100 bags)
January	13.29	12.24	14,452
February	13.59	12.90	9,148
March	14.10	13.21	15,693
April	14.09	13.51	11,298
May	13.97	13.66	7,213
June	14.82	14.10	15,581
July	14.97	13.94	13,902
August	13.99	12.72	12,810
September	13.54	12.63	5,311
October	12.31	11.97	4,513
November	12.24	11.97	6,077
December	12.78	12.30	7,301

Various Sugar Companies
The following table shows capaci-

ties, standings, etc., of the principal sugar companies in Japan as of 1936-1937:

CAPITAL, CAPACITIES, ETC., OF SUGAR COMPANIES 1936-37

Company	Capital		Per Diem Capacity		Production of sugar	
	Authorized in yen	Paid-up in yen	Raw sugar in long ton	Refined sugar in long ton	Raw	Refined
Taiwan Seito Co., Ltd.	63,000,000	43,080,000	11,814	432	4,503,000	1,333,000
Dai-Nippon Sugar Co., Ltd.	61,970,000	56,332,500	19,250	10,920	4,245,000	2,007,000
Meiji Seito Co., Ltd.	58,000,000	45,000,000	8,710	1,050	2,974,000	1,760,936
Teikoku Seito Co., Ltd.	27,000,000	20,250,000	3,234	—	1,070,000	—
Showa Seito Co., Ltd.	15,000,000	11,250,000	3,930	—	710,000	—

Brewing

Beer

Historical Beer was brewed in Japan about 80 years ago by a certain scholar, Mr. Ko Kawamoto, who, as he learned how to brew it when he visited Admiral Perry's fleet, on the latter's visit to Japan, tried to brew on his own private account. In 1870, beer was brewed for the first time on a modern industrial basis by an American, Mr. Gobland, at Amanuma, Yokohama. Four years later, Marquis K. Kuroda saw that the soil of Hokkaido was particularly suitable for barley, so he established a brewery in Sapporo, and soon others were built in Meguro, Tokyo, in Suita, Osaka, in Redoyaya, Yokohama, and other places, and the industry has so developed that at present Japan has six beer brewery companies and fourteen breweries with a total capacity of about 1,500,000 koku.

At the end of February	Production of Beer (In Koku)
1927	795,335
1928	904,377
1929	895,945
1930	846,014
1931	797,544
1932	787,283
1933	959,762
1934	980,175
1935	1,047,213
1936	1,312,496

Japan as Beer Consuming Country In spite of the increase in consumption, Japan still occupies an insignificant position as beer producer and consumer in the world. Her production of about 1,000,000 koku in 1933 stands at the four-

teenth in the list of beer producing countries with the U.S.A.'s 27,000,000 koku as the first. Also her per capita consumption of 2.77 litres was the twenty-eighth in the list of beer consumers with Belgium's 176.46 litres at the head. This is easy to explain. Most of her people take saké, the production of which is about 4.5 times as large as beer. Saké is the standard drink, only a very small quantity of which is enough for average man. In other countries, beer is a staple, an article of food. But in Japan it is something of luxury, reserved for the people of middle and upper classes. A bottle of beer, which contains about one-fifth of a gallon of beer, sells about at 50 or 60 sen, which is too high for average Japanese farmers or wage-earners. If the Japanese of these classes take as much beer as the Belgians do they would spend greater portion of their income on beer.

Beer in 1937 The amount of beer production in 1937 reached 1,201,000 koku, an increase of 50,000 koku or 4.2 percent over the previous year. In the first quarter of the year beer companies operated their factories at full capacity in anticipation of the rise in tax by 40 percent, but during the rest of the year they were compelled to reduce monthly production on account of the decrease in demand caused mainly by the thrift policy of the nation necessitated by the China conflict and the companies were not permitted to enlarge their factories on account of the exchange control restrictions. The actual amount therefore, could not reach the estimated figure of 1,400,000.

continues to be favourable till the crop is ready, the production will surpass the estimate.

PRODUCTION OF SUGAR IN THE EMPIRE BY AREAS

	(In 1,000 piculs)			
	1934-35	1935-36	1936-37	1937-38
Taiwan (white sugar)	15,711	14,672	16,457	17,760
" (brown sugar)	382	347	332	435
South Sea Islands	1,135	819	961	1,282
Loochoo Islands (white sugar)	297	314	295	330
" (black sugar)	1,072	1,225	892	1,060
Daito (white sugar)	70	115	100	119
" (black sugar)	13	11	15	15
Others	302	311	253	272
Karafuto (beet sugar)	—	—	49	57
Hokkaido (beet sugar)	587	515	678	740
Total	19,569	18,329	20,037	22,121

IMPORTS OF REFINED SUGAR BY ORIGINS

Year	(In piculs)		Year	(In piculs)	
	Java	Others & Total		Java	Others & Total
1928	6,230,002	6,350,922	1933	2,184,499	2,210,124
1929	3,673,640	3,795,281	1934	1,727,188	1,732,188
1930	4,072,494	4,077,603	1935	2,323,117	2,341,841
1931	3,304,251	3,305,275	1936	3,396,900	3,600,000
1932	644,927	671,299	1937	2,698,300	2,845,000

SUPPLY AND DEMAND OF SUGAR IN JAPAN PROPER

(Compiled by the Formosan Government-General)

	(In 1,000 piculs)				
	1933	1934	1935	1936	1937
Production in Japan proper	2,118.7	1,946.1	2,316.8	2,505.2	2,237.4
Imports from foreign countries	2,210.1	1,732.1	2,341.8	3,600.1	2,845.0
Imports from territories	10,541.1	11,616.3	15,152.5	14,274.5	14,901.0
Exports to foreign countries	2,172.3	2,019.8	2,669.2	2,978.6	2,482.1
Exports to territories	162.3	211.4	227.9	591.6	604.9
Consumption in Japan proper	12,535.3	13,063.3	16,914.0	16,809.6	16,826.4
Consumption per capita	18.56	19.06	24.30	23.80	23.61

Price of Sugar The price of sugar in 1937 took a rising tendency in the first half and began to show a downward trend in the second half. The rise in the first half corresponded with the rise in the world market, and the highest quotation was ¥14.97 per picul on July 6. But the occurrence of the China Affair, the abolition of sugar surtax and the operation of the Anti-Profitteering Law lowered the price of imported sugar and the exchange quotation in the country in the months of July, August and September. A rising tendency became evident toward the end of the year due to the regaining of the Chinese market with the Japanese advance.

MONTHLY EXCHANGE QUOTATION ON SUGAR IN TOKYO IN 1937

	Highest Lowest		Amount of Contract (In 100 bags)
	(In yen)		
January	13.29	12.24	14,452
February	13.59	12.90	9,148
March	14.10	13.21	15,823
April	14.09	13.51	11,298
May	13.97	13.66	7,213
June	14.82	14.10	15,581
July	14.97	13.94	13,902
August	13.99	12.72	12,610
September	13.54	12.63	5,311
October	12.31	11.97	4,513
November	12.24	11.97	6,077
December	12.78	12.30	7,301

Various Sugar Companies
The following table shows capaci-

ties, standings, etc., of the principal sugar companies in Japan as of 1936-1937:

CAPITAL, CAPACITIES, ETC., OF SUGAR COMPANIES 1936-37

Company	Capital		Per Diem Capacity		Production of sugar 1936-37	
	Authorized in yen	Paid-up in yen	Raw sugar in long ton	Refined sugar in long ton	Raw (piculs)	Refined
Taiwan Seito Co., Ltd.	63,000,000	43,080,000	11,814	432	4,503,000	1,333,000
Dai-Nippon Sugar Co., Ltd.	61,970,000	56,332,500	19,250	10,920	4,245,000	2,007,000
Meiji Seito Co., Ltd.	58,000,000	45,000,000	8,710	1,050	2,974,000	1,760,936
Teikoku Seito Co., Ltd.	27,000,000	20,250,000	3,234	—	1,070,000	—
Showa Seito Co., Ltd.	15,000,000	11,250,000	3,930	—	710,000	—

Brewing

Beer

Historical Beer was brewed in Japan about 80 years ago by a certain scholar, Mr. Ko Kawamoto, who, as he learned how to brew it when he visited Admiral Perry's fleet, on the latter's visit to Japan, tried to brew on his own private account. In 1870, beer was brewed for the first time on a modern industrial basis by an American, Mr. Gobland, at Amanuma, Yokohama. Four years later, Marquis K. Kuroda saw that the soil of Hokkaido was particularly suitable for barley, so he established a brewery in Sapporo, and soon others were built in Meguro, Tokyo, in Suita, Osaka, in Hodogaya, Yokohama, and other places, and the industry has so developed that at present Japan has six beer brewery companies and fourteen breweries with a total capacity of about 1,500,000 koku.

At the end of February	Production of Beer (In Koku)
1927	795,335
1928	904,377
1929	995,945
1930	846,014
1931	797,544
1932	797,283
1933	959,762
1934	980,175
1935	1,047,213
1936	1,312,496

Japan as Beer Consuming Country In spite of the increase in consumption, Japan still occupies an insignificant position as beer producer and consumer in the world. Her production of about 1,000,000 koku in 1933 stands at the four-

teenth in the list of beer producing countries with the U.S.A.'s 27,000,000 koku as the first. Also her per capita consumption of 2.77 litres was the twenty-eighth in the list of beer consumers with Belgium's 176.46 litres at the head. This is easy to explain. Most of her people take saké, the production of which is about 4.5 times as large as beer. Saké is the standard drink, only a very small quantity of which is enough for average man. In other countries, beer is a staple, an article of food. But in Japan it is something of luxury, reserved for the people of middle and upper classes. A bottle of beer, which contains about one-fifth of a gallon of beer, sells about at 50 or 60 sen, which is too high for average Japanese farmers or wage-earners. If the Japanese of these classes take as much beer as the Belgians do they would spend greater portion of their income on beer.

Beer in 1937 The amount of beer production in 1937 reached 1,261,000 koku, an increase of 50,000 koku or 4.2 percent over the previous year. In the first quarter of the year beer companies operated their factories at full capacity in anticipation of the rise in tax by 40 percent, but during the rest of the year they were compelled to reduce monthly production on account of the decrease in demand caused mainly by the thrift policy of the nation necessitated by the China conflict and the companies were not permitted to enlarge their factories on account of the exchange control restrictions. The actual amount therefore, could not reach the estimated figure of 1,400,000.

MONTHLY PRODUCTION OF BEER IN 1936 AND 1937

	1936		Rate of Increase or Decrease (-)	1937		Rate of Increase or Decrease (-)	
	(In koku)			(In koku)			
January	24,941	55,875	124.0	November	24,214	27,316	12.8
February	53,214	123,952	132.9	December	48,307	36,163	-23.1
March	118,520	222,069	87.4	Total	1,210,892	1,261,174	4.2
April	144,638	93,776	-53.2	By Companies			
May	178,200	135,246	-24.1	Dai-Nippon Beer	762,509	801,477	5.1
June	174,458	145,486	-16.6	Kirin Beer	354,891	364,744	2.8
July	193,152	178,876	-7.4	Sakura Beer	84,653	87,776	3.7
August	135,601	151,544	11.8	Oraga Beer	8,839	7,176	-18.8
September	88,788	70,402	-20.7				
October	26,860	20,470	-23.8				

Exports of Beer The exports of beer in 1937 amounted to 134,977 koku, an increase of 2,474 koku over the previous year. The exports to Manchoukuo decreased from 28,500 koku in 1936 to 7,500 koku in 1937, chopping the rate of increase in the total. Kwantung,

China and British India bought more, and China bids to be an increasingly large market for Japanese beer. Japanese beer companies are planning for a vigorous extension of their trade in North China.

EXPORTS OF BEER

(Quantity in koku and value in ¥1,000)

Destination	1934		1935		1936		1937	
	Qty	Value	Qty	Value	Qty	Value	Qty	Value
Manchoukuo	21,937	993	29,160	1,196	28,497	1,158	7,507	308
Kwantung	48,874	2,160	50,780	2,011	41,466	1,750	52,680	1,939
China	11,670	587	11,792	544	12,679	555	23,523	944
Hongkong	2,188	103	2,302	116	2,841	149	2,121	106
British India	11,176	528	1,4167	639	13,926	650	16,969	753
Straits Stmts	2,033	92	2,444	108	2,880	140	2,973	141
Dutch India	4,209	225	3,669	189	3,108	164	2,481	125
Others and total	118,009	5,535	135,107	5,870	132,503	5,912	134,977	5,685

Japanese Saké

History Japanese saké, brewed from rice, has been the principal alcoholic liquor of the Japanese from olden times. It is brewed everywhere in the country, but the most famous places are the "Nada Gogo," five villages in Hyogo prefecture, the climatic conditions of which are peculiarly suited for its production. In recent years, Hiroshima and Fukuoka prefectures have also begun to brew saké of superior grade. The best rice for saké brewing is raised in Kumamoto, Hyogo and Okayama prefectures.

As saké has been the chief drink of the people for many centuries it has been heavily taxed all along. In 1879, a tax of ¥2 per koku was levied and since then the rate has been gradually

increased until it now amounts to ¥40 per koku and brings in an annual revenue to the Government of ¥200,000,000.

No study of brewing saké on a scientific basis was started until as late as 1895. In 1904, a Brewery Experimental Station was established by the Government, at Oji, Tokyo, various experiments were made, and many good experts trained. The art of brewing has now advanced a great deal and the quality of saké brewed has become practically uniform. The quantity now brewed annually is about 5,000,000 koku, nearly all of which is consumed at home, only a negligibly small quantity being exported to China and several other countries.

Present Condition Production of saké in recent years is as follows:

PRODUCTION OF SAKE BY KINDS

(In 1,000 koku)

Year	Refined Saké	Unrefined Saké	White Saké	Sweet Saké	Distilled Saké	Total
(Oct.-Sept.)						
1926-27	4,804	10	10	91	519	5,439
1927-28	4,520	9	10	107	517	5,158
1928-29	4,668	8	10	103	534	5,326
1929-30	4,238	7	8	83	466	4,810
1930-31	3,851	6	6	70	455	4,121
1931-32	3,284	5	6	87	445	3,829
1932-33	3,807	5	6	100	509	4,429
1933-34	4,012	6	6	92	528	4,646
1934-35	3,772	5	6	87	499	4,371
1935-36	3,784	5	6	97	534	4,426

The peculiarity of brewing saké is that large quantities of raw materials cannot be fermented at once. According to the growth of saccharomyces saké, steamed rice, yeast, and water are gradually added and fermentation is brought about slowly. If this method is adopted, with only a very small quantity of saccharomyces saké a large amount of raw materials may be fermented and saké of good flavour may be brewed. If, on the other hand, a large quantity of raw materials is fermented at one time by using a great deal of saccharomyces saké, the resultant saké will not taste good.

Consumption of Saké Nothing is more directly affected by prosperity or depression than the consumption of saké, and it can be quite well understood that consumption, owing to the economic depression, has considerably decreased during the last few years. The farming districts are now feeling the depression very severely, and as saké is consumed more in rural than in urban districts, the saké brewers have suffered in proportion.

Supply and Demand in 1937 According to the report of the Japan Saké Brewers' Association the production of refined saké in the saké year October 1936 to September 1937 amounted to 4,281,446 koku, which is slight decrease from the previous year.

SUPPLY AND DEMAND OF SAKE

(Saké Brewers' Association figures)

(In Koku)

Saké Year (October-September)	Production	Shipped	Stock
1931-32	3,531,544	3,700,364	2,524,896
1932-33	4,094,399	3,685,328	2,300,333
1933-34	4,314,096	3,857,112	2,526,894
1934-35	4,068,794	3,852,846	2,407,572

1935-36	4,282,610	4,089,128	2,366,661
1936-37	4,281,446	4,089,128	2,407,572

The following are the annual figures for the production and export of saké from 1931 and 1937:

Soft Drinks

As Japan is geologically blessed with mineral springs, the people were not slow to study their medicinal effects, and hot springs were used as baths from olden times. As to the utilization of mineral spring water for drinking purposes, mineral water from Rokko Mountain in Hyogo prefecture was the first of its kind that was put on the market. This was as late as 1833, and the drink was named "Mitsuya Hiranotsui". Three years later, some Englishmen taught the making of artificially aerated water and with the importation of Codd's bottles and syphon-bottles the manufacture of sweetened aerated water originated. These drinks soon became very popular and the industry made rapid development. After the Russo-Japanese War, "Champion" cider was put on the market to be soon followed by lemonade, citron, and different kinds of syrup, etc.

At present the total production of soft drinks amounts to 710,000 koku a year, of which sweetened drinks accounts for 93%, the rest being ordinary unflavoured aerated water or soda-water. Producers of soft drinks may be roughly divided into two classes. The first of these is composed of those who manufacture the drinks along with beer. These have good equipment and produce on a large scale. The second class is made up of those many who produce on a small scale and sell their products locally.

PRODUCTION OF SOFT DRINKS

(In yen)

	Cider	Ramune	Syrup	Others	Total
1931	8,509,936	1,803,975	970,528	2,668,945	13,953,384
1932	6,976,626	1,676,215	1,073,595	3,721,403	13,447,829
1933	14,132,015	1,424,789	1,182,207	2,950,569	19,689,580
1934	7,801,890	1,600,975	1,848,819	5,495,852	16,747,536
1935	10,365,531	1,611,915	1,615,720	4,023,263	17,616,429
1936	8,741,824	1,724,488	2,118,519	6,394,987	18,979,818

CONSUMPTION OF SOFT DRINKS

(In litre)

(Import included)

	Lemonade, etc.	Cider	Soda water, etc.	Others and Total
1933	24,152,273	53,684,554	7,384,382	129,667,486
1934	22,728,171	53,705,621	7,334,329	142,636,001
1935	18,298,972	56,474,509	8,013,707	139,163,526
1936	17,566,476	49,663,655	9,628,547	135,012,454

Soft drinks which are now selling in Japan can be classified from the standpoint of water and gas used into the following:

(1) Those manufactured of natural spring water and natural carbonic acid.

(2) Those manufactured of natural spring water and artificial carbonic acid.

(3) Those manufactured of filtered or well-water and artificial carbonic acid gas.

Canning

Introduction

The canning industry in Japan was started as early as 1870, but the real impetus to its development was given by the Sino-Japanese and the Russo-Japanese Wars as they created a great demand for canned provisions for the Army and Navy. The Treaty of Portsmouth also served to further encourage this industry by giving Japan fishing rights in Kamchatka and the Maritime Province of Siberia, and together with the development of can manufacturing and floating canneries, the above have been the cause of the great progress in the canning industry as a whole.

Present Conditions of the Industry

At present, the packing industry in Japan is in a fairly developed state in all of its branches. Canned meats have reached a stage where the quantity of production cannot be increased. The demand for meat in Japan has expanded so far that supply cannot keep pace with demand, a shortage of cattle is being felt and a plentiful supply for canning is not forthcoming. On the other hand,

canned vegetable, such as canned bamboo shoots, are finding good markets in the U.S.A. and China. Of all the fruits procurable in cans pineapples are the most popular with the Japanese. They are produced in Formosa, and of the 450,000 cases or more that are packed in that island about 400,000 cases are consumed in Japan proper while a greater part of the balance is sold in Formosa, and only a few thousand cases are exported to foreign countries. As to canned fish and shellfish, the production of canned crab and salmon dominates all others. In no other places are canned crabs produced in such large quantities as in Japan, and most of this production is exported to the U.S.A., annual exports being valued at about ¥10,000,000. Red and silver salmon are finding a good market in Great Britain. In view of the fact that catches of salmon on the coast of the U.S.A. and Canada are decreasing the exportation of canned salmon is expected to increase, as also is the exportation of crab-meat, for the demand for it in the U.S.A. is increasing steadily.

PRODUCTION OF CANNED PROVISIONS

(Quantity in kg. and value in yen)

Kinds	1935		1936	
	Quantity	Value	Quantity	Value
Canned meats	2,577,441	2,364,517	2,914,390	2,609,676
Canned fishes	41,303,645	19,291,820	59,034,014	29,989,998
" fruit	8,385,953	3,821,032	22,538,061	7,143,832
" vegetable	9,608,730	3,709,580	10,853,720	4,372,457
Other canned food	38,963,658	16,942,399	37,294,046	16,153,693
Total	100,839,427	46,129,348	132,634,231	60,269,656

The exports of canned provisions from Japan for 1937 amounted to ¥86,905,000 showing an increase of ¥15,828,000 over 1936. The low exchange rate was a potent factor to have caused the heavy gain in exports. Of the exports, ¥21,940,000 was for the United States; ¥29,122,000 for the United Kingdom.

Japanese goods have now completely ousted American goods in these countries. This has given rise to severe competition among Japanese makers and

exporters. Surplus production and the inferior quality are troubling the trade.

Alive to the fact that the canned tomato-sardine industry is doomed to ruin if the situation is allowed to go on unremedied, the Ministry of Agriculture and Forestry has applied the Export Marine Product Control Law to these articles and had the Japan Export Sardine Marine Product Guild manage export testing.

CHAPTER XXII

MISCELLANEOUS INDUSTRIES

Paper, Cement, Ceramics, etc.

Paper

Historical and General

Paper-making in Japan remained a handicraft for over twelve centuries after a Korean priest, Doncho, introduced the technique in 610 A.D. (Some writers maintain that paper existed in this country prior to that date.) During this long period of time, various grades of paper were produced from fibres of certain shrubs such as "kozo¹," "mitsumata²," "gampi³," etc.

Foreign-style paper was made for the first time in the 7th year of Meiji, 1874, in a small mill, the Yukosha, Tokyo, through the assistance of an English engineer. Several more mills were established the following year, but the development of the industry was naturally slow on account of the small demand. In the beginning, the raw materials used for foreign-style paper were chiefly rags, but in 1889, wood pulp was used for the first time in a mill which belonged to the Oji Paper Mills, Ltd. At first, the smallness of quantity required and competition from abroad made the industry struggle severely, but as with all other industries, the wars with China in 1894-95 and with Russia in 1904-5 gave it a great chance of development. In 1910, the Tomakomai Mill of the Oji Paper Mills, Ltd., which had been under construction since 1906 began operation. With the establishment of the Tomakomai Mill Japan became selfsupplying with respect to newsprint. Again, the Oji Paper Mills, Ltd., took the initiative in establishing a pulp mill, in 1912, in Odomari, Saghalien Island, but was quickly followed by the Fuji Paper Mills, Ltd., and the Karafuto Industrial Co., Ltd. The industry was just getting well settled when the Great War broke out and prosperity was forced upon it. Importations of foreign-style paper was practically stopped. Demand at home advanced, ex-

¹ Paper mulberry. ² Golden flowered Edgeworthia (*Edgeworthia chrysantha*). ³ An indigenous plant (*Wikstroemia sikokiana*).

ports increased and the industry expanded at a great speed. The production of foreign-style paper in 1881 was only 3,968,000 lbs., it increased to 327,614,000 lbs. in 1914, 519,141,000 lbs. in 1919, 317,383,000 lbs. in 1924, and 1,415,187,000 lbs. in 1929.

In 1932 the Oji Paper Mills, Fuji Paper Mills and Karafuto Industrial Company were merged into one firm under the name of the Oji Seishi Kabushiki Kaisha (Oji Paper Manufacturing Company, Ltd.). It has a subscribed capital of ¥300,000,000, and is virtually monopolistic having control over 80% of the total paper production in the country and producing about 85% of the total foreign-style paper. The real strength of the Oji Paper Manufacturing Co., Ltd. lies in its almost complete monopoly of pulp production. In 1937 it turned out 1,702,654 lbs, which was equivalent to 80 per cent of domestic production.

Paper Industry in 1937

The economic control in 1936 and 1937 was aimed at the expansion of the heavy industries at the sacrifice of various peacetime industries. But the paper manufacturing industry in Japan is one of the best organized and voluntarily controlled enterprises in the country and it has been able to cope with the emergency period with the minimum amount of sacrifice on its part. The conditions of paper industry and trade in 1937, therefore, showed a steady increase both in production and consumption, the exports increasing in spite of a decrease of the Chinese market, and the price remained high in general, so that the paper business for the whole year showed a definite advance over the previous year, in spite of the inactive periods during the second half of the year. The Government control over the consumption of paper by daily press was not very strict in view of the importance on the newspapers for the cultural life of the people.

Supply and Demand During 1937 the production of paper by member com-

panies of the Paper Manufacturers' Association of Japan reached 2,129,000,000 lbs., the quantity sold being 2,032,000,000 lbs., both figures being the highest on record. The former increased by 303,177,000 lbs. or 16.6 per cent and the latter by 160,232,000 lbs. or 8.5 per cent as compared with the previous year.

MONTHLY PRODUCTION AND SALE OF PAPERS IN 1937

	(In 1,000 lbs.)	
	Production	Sale
January	161,799	190,083
February	172,857	183,649
March	165,290	185,631
April	186,945	183,623
May	187,567	181,161
June	191,270	182,770
July	184,551	172,525
August	185,918	156,015
September	183,080	139,043
October	175,918	139,607
November	171,674	160,937
December	161,164	157,024
Total for 1937	2,129,025	2,032,872
Total for 1936	1,825,848	1,872,640

Classified according to kinds, paper produced for the daily press increased from 768,000,000 lbs. in 1936 to 825,000,000 lbs. in 1937, but in comparison with the total quantity produced it decreased from 43 per cent in 1936 to 39 per cent in 1937, the main reason for this being the adoption of the quota system for newspaper companies for the period of one year from July, 1937.

PRODUCTION AND SALE OF PAPERS CLASSIFIED BY KINDS IN 1937

	(In 1,000 lbs.)	
	Production	Sale
Special printing paper	166,896	154,574
Printing paper	254,452	240,226
Papers for writing and drawing	88,023	78,786
Imitation Japanese paper	146,202	143,012
Art paper, and the like	44,387	43,199
Paper for daily press	825,188	811,291
"Hanshi" paper	41,436	36,105
Packing paper	12,416	11,246
Special packing paper	279,233	257,756
Japanese style paper	42,397	40,997
Pasteboard, etc.	109,551	101,994
Miscellaneous	118,884	113,688
Total	2,129,025	2,032,872

Decrease of Imports The imports of paper in 1937 amounted to 135,000,000 lbs., a decrease of 30 per cent as compared with the previous year, although the value reached ¥18,423,000, an

increase of 15 per cent. The decrease in quantity was the result of the soaring of prices in Canadian market due to an increase of demand for Canadian paper in the U. S. A.

IMPORTS OF PAPER BY COUNTRIES

(In 1,000 lbs. and ¥1,000)

From	1936		1937	
	Quan- tity	Value	Quan- tity	Value
Canada	153,007	8,950	60,390	5,718
Sweden	15,362	1,716	19,668	2,702
U. S. A.	5,616	723	16,869	2,199
Germany	4,871	1,490	10,578	3,032
Norway	5,634	521	10,359	1,099
Great Britain	3,520	988	4,689	1,330
Holland	1,256	232	4,403	587
Czechoslovakia	1,005	200	2,225	535
Australia	1,802	331	1,536	340
Others and Total	193,664	16,006	135,092	18,423

Increase of Exports The exports of paper in 1937 traced the normal increasing tendency of recent years in spite of the repercussions resulting from the China incident, and reached 271,000,000 lbs. valued at ¥38,707,000, an increase of 20.4 and 40.5 per cent respectively over the previous year. The increase in value indicates rise in price to the benefit of paper manufacturing industry. All countries, except China, increased their purchases. The most important customer as in former years, was the Kwantung Leased Territory which increased its purchases by 112,894,000 lbs., which represents 42 per cent of the total Japanese paper exports to foreign countries. Although China bought less, it occupied the second place as before. Manchoukuo increased by 15,820,000 lbs. or 82 per cent over the previous year.

EXPORTS OF PAPER BY COUNTRIES IN 1937

(In 1,000 lbs. and ¥1,000)

To	1936		1937	
	Quan- tity	Value	Quan- tity	Value
Manchoukuo	19,239	3,008	35,061	5,931
Kwantung L. T.	91,312	9,699	112,894	13,814
China	54,577	7,413	46,268	6,940
Hong-Kong	13,595	1,213	16,075	1,777
British India	19,200	1,025	26,459	1,613
Straits Settlements	3,177	360	4,163	564
Dutch East Indies	8,162	916	11,108	1,830
Philippines	3,008	317	3,310	404
Siam	5,669	565	7,853	921
U. S. A.	2,046	1,116	2,231	1,773
Australia	3,609	477	7,634	1,176
Others and Total	225,080	27,545	271,098	38,707

Exports to China The effect of the present hostilities with China on paper exports was insignificant as compared with that of the Manchurian incident. China occupied a pre-eminent position as an importer of Japanese paper until the time of the Manchurian incident. In the year 1932, China's paper imports from Japan fell to one-third of what they were before, thereby dealing a strong blow to Japanese paper industry. The importance of China for Japanese paper industry has been greatly reduced since then because of the cultivation of new markets in other countries and the creation of Manchoukuo. The effect of the present trouble with China on paper exports has therefore been very insignificant.

EXPORTS OF PAPER TO CHINA

(In 1,000 lbs.)

Year	Total Exports of Paper	Exports to China	Percentage against the Total
1930	226,985	198,257	87.7
1931	188,524	125,128	66.4
1932	132,604	52,582	39.2
1933	154,025	48,939	31.7
1934	172,306	53,317	30.9
1935	199,975	54,262	27.1
1936	225,080	54,577	24.2
1937	271,098	40,268	22.8

Note: For 1930 and 1931 Manchuria is excluded.

Amount of Pulp used The amount of pulp used by the member companies of the Paper Manufacturers' Association during the 11 months from January to November, 1937, reached 1,868,996 lbs., showing an increase of 16 per cent over corresponding period in 1936.

IMPORTS OF PULP BY COUNTRIES IN 1937

(In 1,000 lbs. and ¥1,000)

From	For Paper		For Artificial Silk		Total	
	Quantity	Value	Quantity	Value	Quantity	Value
U. S. A.	112,676	10,418	312,072	38,763	424,748	49,181
Canada	71,036	6,581	46,216	6,038	117,252	12,619
Finland	11,722	1,013	73,581	8,483	85,303	9,497
Sweden	186,061	16,412	88,685	10,582	274,746	26,993
Norway	14,987	1,786	125,334	15,285	140,321	17,071
Czechoslovakia	171	20	9,404	1,137	9,575	1,157
Others	934	118	685	83	1,619	202
Total for 1937	397,586	36,349	655,978	80,371	1,053,564	116,720
Total for 1936	354,717	22,949	382,420	44,158	737,138	67,107

PULP USED FOR PAPER MANUFACTURE IN 1937, Jan.—Nov.

(In 1,000 lbs.)

	Sulphite pulp	Ground pulp	Total
Self-Made			
1936	702,193	658,992	1,361,185
1937	822,044	710,400	1,532,444
Purchased			
1936	247,600	7,766	255,366
1937	317,303	19,248	336,551
Total			
1936	949,794	666,759	1,616,553
1937	1,139,348	729,648	1,868,996

Imports of Pulp The increase of pulp production in Japan and areas under her influence can hardly keep pace with the increase in demand and the imports inevitably went up. In 1937, to 1,053,000,000 lbs., valued at ¥110,000,000. Of the total quantity 38 per cent was used by paper industry and 62 per cent by the artificial fibre industry, the former accounting for 31 per cent of the total value, and the latter for 69 per cent. As compared with the previous year, the 1937 imports of pulp showed an increase of 12 per cent in quantity and 58 per cent in value. The difference in percentages of increase is accounted by the rise in price from ¥0.064 per pound in 1936 to ¥0.091 in 1937. The need for increasing domestic production of pulp to the point of self-sufficiency is being strongly urged in behalf of artificial silk industry, but the demand for pulp is increasing on account of the expansion of paper industry as well as of artificial silk industry, and the imports are continuing to increase in consequence.

PRODUCTION OF PAPER SINCE 1927

(Factory Statistics by the Ministry of Commerce and Industry)
(Quantity in 1,000 kg. and value in ¥1,000)

Year	Printing Paper		Copying Paper		Drawing Paper		Wrapping Paper	
	Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value
1927	347,300	86,699	3,975	1,557	20,799	5,083		
1928	355,056	90,172	4,331	1,411	17,704	4,007		
1929	366,709	87,745	3,592	1,206	10,662	2,800		
1930	369,523	74,055	4,661	1,587	14,557	2,559		
1931	321,711	62,416	3,360	1,120	9,567	1,839		
1932	217,186	54,566	2,366	818	22,655	4,369		
1933	346,594	68,709	23,563	5,354	27,696	6,300		
1934	379,062	84,167	11,684	4,216	39,180	10,327		
1935	408,671	90,263	17,854	5,480	49,049	11,028		
1936	434,743	94,795	19,850	5,770	57,079	14,862		

Year	Match Paper		Cigarette Paper		Art Paper		"Hanshi"	
	Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value
1927	1,964	560	2,373	5,186	—	—	2,319	8,073
1928	1,636	579	7,392	4,192	—	—	2,149	4,752
1929	732	212	7,564	7,382	12,821	5,949	6,927	11,640
1930	1,005	247	6,679	5,077	6,348	2,823	4,585	6,084
1931	812	176	4,210	2,452	8,959	3,703	4,394	5,349
1932	2,088	414	3,655	2,641	8,883	3,367	3,122	5,654
1933	1,952	501	7,656	4,633	10,961	4,075	1,347	5,091
1934	2,787	711	5,658	4,410	15,091	5,655	2,838	6,924
1935	6,815	1,825	10,285	7,480	11,268	3,976	1,953	6,690
1936	5,170	1,405	14,165	9,659	12,537	4,081	3,558	6,080

Year	"Minogami"		"Torinoko" and Imitation Paper		Board		Others and Total	
	Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value
1927	362	1,522	5,301	113,173	15,700	175,318		
1928	194	883	7,276	135,149	17,194	182,476		
1929	178	1,048	7,585	162,353	19,476	190,635		
1930	128	845	4,368	150,215	15,469	154,574		
1931	143	776	5,088	146,863	11,414	134,095		
1932	168	954	7,120	139,253	11,646	132,170		
1933	163	638	4,442	178,151	16,337	168,473		
1934	305	1,010	4,174	198,502	20,079	200,923		
1935	339	1,755	6,438	256,336	27,004	224,780		
1936	358	1,410	6,932	265,238	27,973	250,983		

CONSUMPTION OF FOREIGN-STYLE PAPER

(Statistics of the Nihon Seishi Rengokai)
(Quantity in 1,000 lbs.)

Year	Production	Imports	Exports	Consumption	Consumption per Capita
1928	1,343,479	102,863	134,035	1,262,074	20.2
1929	1,451,526	81,084	140,289	1,351,284	21.1
1930	1,401,711	100,160	168,808	1,281,888	19.9
1931	1,374,899	147,549	141,821	1,338,331	20.4
1932	1,311,315	99,453	87,356	1,391,471	19.0
1933	1,444,104	104,330	105,200	1,480,931	21.2
1934	1,591,474	138,556	139,715	1,643,542	22.6
1935	1,719,637	167,482	199,975	1,764,976	26.8
1936	1,825,848	193,664	225,080	1,869,641	25.6
1937	2,129,026	165,084	271,098	2,041,665	29.0

Note: The figures for consumption are made out by reducing stocks at year end.

PRODUCTION OF CELLOPHANE

Year	Production		Year	Production	
	Qty in kg.	Value in yen		Qty in kg.	Value in yen
1930	—	85,400	1934	726,842	3,414,839
1931	64,575	176,170	1935	2,382,433	3,940,716
1932	147,000	473,634	1936	3,458,535	6,118,818
1933	574,029	2,008,057			

QUOTATIONS OF FOREIGN-STYLE PAPERS

(In yen)

	Printing Paper "Chitose" (per one lb.)	Imitation Paper "B" (per one lb.)	Rough Paper (per one ream of 16½ lbs.)		Printing Paper "Chitose" (per one lb.)	Imitation Paper "B" (per one lb.)	Rough Paper (per one ream of 16½ lbs.)
	1930 average	0.143	0.121		3.00	1936 average	0.166
1931 ..	0.130	0.116	2.65	1937 high	0.205	0.190	5.70
1932 ..	0.135	0.130	2.75	low	0.180	0.165	4.30
1933 ..	0.171	0.168	3.49	average	0.201	0.186	5.46
1934 ..	0.168	0.165	3.45	1938 January	0.205	0.190	5.70
1935 ..	0.167	0.161	3.45	February	0.205	0.190	5.70

PRODUCTION OF PULP FOR PAPER

(Forest Bureau, Ministry of Agriculture and Forestry)

(In tons)

Year	Sulphite Pulp	Ground Pulp	Karaff Pulp	Others and Total	Lumber Consumed (in koku)
1930	337,151	259,984	28,402	625,537	8,426,888
1931	290,171	246,489	30,049	566,709	7,416,911
1932	277,588	241,746	31,786	551,120	6,794,149
1933	310,621	267,993	40,144	637,400	7,278,883
1934	—	—	—	710,000	7,317,000
1935	—	—	—	724,042	7,638,042
1936	—	—	—	747,355	7,786,000
1937	—	—	—	810,590	8,745,000

IMPORTS OF PULP

Country of Origin	Quantity (in ton)				Value (in ¥1,000)			
	1934	1935	1936	1937	1934	1935	1936	1937
U.S.A.	83,563	109,013	153,735	188,115	16,321	22,812	31,758	49,181
Canada	40,152	34,354	27,748	51,929	7,245	5,991	4,150	12,619
Sweden	47,280	50,574	56,228	121,681	7,438	7,735	9,735	25,293
Norway	39,521	48,499	55,778	62,146	10,464	13,201	14,621	17,071
Others	14,745	27,414	32,979	42,737	2,787	5,362	6,842	10,355
Total	225,261	269,853	326,467	466,608	44,256	55,101	67,107	116,720

SUPPLY AND DEMAND OF PULP FOR PAPER

(Forest Bureau, Ministry of Agriculture and Forestry)

(Unit in ton)

Year	Production			Consumption			
	Production	Imports	Consumption	Production	Imports	Consumption	
1931	565,209	75,194	645,124	1935	724,042	143,534	843,945
1932	547,520	64,208	676,256	1936	747,355	157,358	900,578
1933	614,139	107,774	738,458	1937	810,594	—	—
1934	691,836	140,261	786,399				

Fertilizers

In 1931 the association formed by manufacturers of chemical fertilizers, maintained a high rate of curtailment of production in order to minimize the loss which resulted from the general alarming situation in industries, especially in agriculture, but the dumping of sulphate of ammonia by British and German manufacturers swept the fertilizer market and the prices of bean cake, fish guano, sulphate of ammonia, superphosphate of lime, mixed fertilizers, cyanamide, etc., slumped to destructive levels. The domestic manufacturers did everything possible in their powers to stop importations. They proposed the raising of the rate of import duty, the passing of a law, the establishment of a system of special permits for import and export, and so on, but practically in vain. The price of sulphate of ammonia declined to as low as ¥60 per ton. The situation was very serious, and at last, in November, a special permit system was put into effect through a Departmental ordinance. A ministerial change took place during December and the Seiyukai Party came into power. The Government at once re-imposed the embargo on gold, exports and the stock market immediately became active, and industries, including the fertilizer industry, followed suit.

The problem of food in Japan is a serious one. The Japanese population is increasing yearly by about a million, but the amount of food produced in the country is not enough to feed them. Besides, the arable land in the country is so small and limited that hardly any space is left to effect any further increase, and the only method left, beyond extending abroad, is to increase the yield of crops through intensive farming. For this fertilizers are necessary and the demand has steadily been increasing. The consumption of fertilizers during 1936 was valued at ¥673,940,000, of which ¥355,500,000 were self-supplied fertilizers, while ¥318 million's worth were bought in the market.

General Condition of the Industry

Of all the chemical fertilizers, superphosphate of lime and sulphate of ammonia are the two representative ones, and because of the largeness of their demand and supply the market trend of these two is practically the market trend of the rest.

Superphosphate of Lime The principal raw material for the manufacture

of superphosphate of lime is phosphate rock. During 1930 some 570,000 tons were imported, while some 63,385 tons were produced at home, and during 1936 and 1937 imports were 829,812 and 922,317 tons respectively. This rock is imported from U.S.A., Egypt, and the South Sea Islands.

Superphosphate production has been gaining steadily and in 1936 its production was 1,437,196 m.t. valued at ¥47,417,000. Production during the past few years is reported by the Ministry of Agriculture and Forestry as follows:

PRODUCTION OF SUPERPHOSPHATES

(In metric tons)

1930	957,159
1931	862,401
1932	1,041,497
1933	1,116,573
1934	1,126,149
1935	1,331,616
1936	1,437,196
1937 (estimate)	1,645,593

Supply and demand of superphosphate for the last 11 years follows:

Year	Production (1,000 tons)	Exports and Re-exports (1,000 tons)	Consumption in Japan Proper
	1927	935	39
1928	926	41	884
1929	947	38	908
1930	957	35	922
1931	862	32	808
1932	1,041	81	960
1933	1,116	106	1,009
1934	1,126	121	1,004
1935	1,331	151	1,150
1936	1,437	168	1,242
1937 (estimate)	1,645	150	1,595

Sulphate of Ammonia The demand for sulphate of ammonia has steadily increased for years. Consumption in 1930 was 488,000 tons, in 1931 it showed a remarkable increase to 618,000 tons. Imports in 1930 were 302,905 tons (value ¥29,612,000), in 1931 they decreased to 224,148 tons and in 1932 a decrease to 119,000 tons was witnessed, value being ¥15,861,000 and ¥7,035,000 respectively. The decrease in imports was made good by the increase in domestic production, which in 1931 was 393,237 tons,

and increased to 880,262 tons in 1936 and 1,340,000 tons in 1937. Japan, in this manner, has become self-supporting in sulphate of ammonia, and has become very uneasy regarding over-

production in the future.

Supply and demand of ammonium sulphate in Japan for the last 11 years follow:

	Production	Imports	Reimports (In metric ton)	Exports	Re-exports	Consumption in Japan proper
1927	176,475	250,014	—	774	40,471	365,243
1928	232,425	284,475	—	2,431	57,921	450,548
1929	234,609	380,658	—	1,858	93,488	510,521
1930	265,626	302,905	18,665	14,924	83,672	480,000
1931	393,237	224,148	53,260	11,608	41,395	617,642
1932	459,663	118,735	125,123	17,956	67,440	618,121
1933	471,398	108,449	83,722	50,061	62,244	551,501
1934	494,350	160,901	84,749	1,526	88,058	650,416
1935	611,751	238,598	71,551	5,992	103,294	812,614
1936	880,262	314,131	56,436	18,417	162,024	1,050,368
1937	1,340,000	224,208	56,584	7,292	220,108	1,393,402

Cyanamide While cyanamide was a fertilizer difficult to make farmers use it, they now recognize the merit of this nitrogenous fertilizer, and owing perhaps to its reasonableness in price, its consumption increased with a great stride. In 1931 its consumption was 168,448 tons, in 1932 177,632 tons, in 1933 216,525 tons, and in 1934 169,071. Production increased rapidly too. While, in 1924, it barely amounted to about 121,000 tons, it increased up to 290,398 tons in 1936, more than two times as large.

PRODUCTION OF CYANAMIDE

(Unit in metric ton and in ¥1,000)

Year	Quantity	Value
1927	120,413	10,683

SUPPLY AND DEMAND OF BEAN CAKE

	(In ton)					
	Production	Imports	Re-imports	Exports	Re-exports	Consumption
1930	232,727	889,743	17,451	10,557	1,136	1,087,476
1931	279,265	1,032,680	17,960	2,627	—	1,278,097
1932	221,369	629,407	9,394	9,094	—	813,983
1933	244,768	539,586	27,573	2,357	—	770,029
1934	283,241	646,032	88,411	3,051	800	978,271
1935	226,876	431,978	87,051	2,431	368	714,373
1936	248,733	376,783	121,931	2,384	848	722,165
1937 (estimate)	330,000	540,604	41,262	3,595	584	907,687

Bean Cake The domestic production of bean cake is very small when compared with the quantity imported, the greater part of which comes from Manchoukuo. In 1916 the consumption of bean cake, was 807,975 tons, which, by 1926, increased to 1,510,088 tons, but since then no increase can be noted as

the development of the synthetic nitrogen industry has cut deeply into the development of vegetable fertilizer industry.

Fish and Animal Fertilizers In Japan fish is indispensable as food, but at the same time they are caught for oil extraction and the refuse is con-

verted into manure. The consumption of fish and animal fertilizers is as shown in the tables attached at the end of this article. (See Chapter XV.)

In addition to chemical, vegetable and animal fertilizers, a great quantity of self-supplied fertilizers are supplied and consumed, the figures for which are given also in statistics attached at the end of this subject.

Fertilizer Industry in 1937

The fertilizer industry in 1937, like most other industries, was profoundly influenced by the China incident. The demand for ammonium sulphate as a raw material for explosives expanded with the advance of the hostilities in China, and while imports were curtailed as a result of trade control, supplies for farming grew shorter every month. As a result, prices soared, bringing adoption of distribution-control and price-fixing measures in the months following the occurrence of North China incident in July, 1937.

Ammonium Sulphate According to the Governmental decision on the price of ammonium sulphate on July 22, the maximum price was fixed at ¥3.58 per 10 kan and minimum price at ¥3.50.

But the actual market price continued to exceed the maximum official price, the fertilizer being quoted at a higher price to the consumers on account of the limited supply, although producers' prices were officially controlled. The cost of manufacture was ¥73.70 in 1936 and ¥78.03 in 1937 per ton. The monthly quotations in 1937 were as follows:

QUOTATIONS OF AMMONIUM SULPHATE IN 1937

(In yen per 10 kan)

	Average	High	Low	Fixed price
January	3.27	3.54	3.23	—
February	3.62	3.69	3.56	—
March	3.35	3.38	3.30	—
April	3.60	3.70	3.50	3.40
May	3.64	3.97	3.47	"
June	3.41	3.58	3.27	"
July	3.59	3.47	3.27	"
August	3.54	3.62	3.42	3.50-3.58
September	3.46	3.49	3.41	"
October	3.53	3.56	3.37	"
November	3.35	3.39	3.31	"
December	3.63	3.70	3.60	"

Under the circumstances, the Department of Agriculture and Forestry got the approval of the Diet, on August

27, for an appropriation of ¥1,440,000 for the ammonium sulphate import compensation and issued a rule for keeping a reserve of 50,000 tons, to make the control of distribution more effective.

The Government submitted a bill for enactment of the Temporary Fertilizer Distribution Control Law to the Diet in September, 1937, and the law was enacted and came into force on September 10. The purpose of the legislation was to establish a special organ for the distribution of important fertilizers under Governmental control in view of the reduced supply of the self-produced manures of farm villages because of the mobilization of men and horses on the farms for defence services, and the curtailment in the imports of chemical fertilizers. In accordance with the provisions of the law a new company was established on November 26, for the sales of ammonium sulphate, with a subscribed capital of ¥10,000,000, most of shares being held by the Ammonium Sulphate Manufacturers' Association. The purpose of the company is to monopolize the sales of the fertilizer and control its retail price.

Official prices of ammonium sulphate were revised anew for the period extending from January to July, 1938, and were fixed at ¥3.63 for January, ¥3.68 for February and ¥3.73 for March-July. But the most important requirement of the industry is to increase domestic production toward the level of self-sufficiency, which object has been largely hindered by the price-fixing policy. The Department of Agriculture and Forestry is, therefore, planning to establish a semi-Governmental ammonium sulphate manufacturing company, capitalized at ¥80,000,000, with a capacity of producing 300,000 tons by itself and helping other companies to increase their production by 200,000 tons by the end of the fourth year of its establishment.

Superphosphate of Lime Viewed from the movement of prices the superphosphate manufacturing companies were hard pressed in 1937 on account of the short supply of phosphate ore. After the occurrence of the China incident the Government put the imports of raw material under strict control with the expectation that an economy in the use of the fertilizer might be possible since an excessive consumption of the article had been evident in the past few years. Consequently prices went up in the latter half of the year. The amount of imports of phosphate

ore permitted in the year, however, reached 998,000 tons, and the total amount of supply which amounted to 1,140,000 tons, including the domestic output, was hardly sufficient to meet the demand, and much anxiety is felt among the manufacturing companies for the current year. The price of phosphate rock went up to ¥50 per ton at the end of 1937, nearly twice as high as the price at the end of the previous year, chiefly on account of the rise in freight. The market price of other materials was correspondingly high, and the consequent rise in the price of the fertilizer may result in decreased demand in 1938.

Under the circumstances a rivalry among the manufacturers would have meant no profit to any one, and thus a fair distribution of phosphate rock among them became a necessity. As to the rate of production and shipment of superphosphate of lime, a co-operative control was being considered by the manufacturers since January 1937. But in view of the general condition of the industry which necessitated the restriction of production to 1,800,000 tons against the annual productive capacity of 2,400,000 tons, a system of allotment based on the productive capacity of each company was found to be impracticable.

In the meantime the measures of control of foreign exchange and restrictions on imports of phosphate ore which came into force compelled the manufacturers to a co-operative effort in obtaining the material by collective purchase and to arrive at a system of distribution agreeable to all toward the end of 1937.

Supply and demand of superphosphate of lime in the 1938 fertilizer year, which began with August, 1936 and ended in July 1937, was as follows:

SUPPLY AND DEMAND OF SUPERPHOSPHATE OF LIME IN 1936-37

(In 1,000 metric tons)

Supply		Demand	
Balance of the			
Previous Year	232	Exports	37
Production	1,667	Consumption	1,635
Japan proper	1,597	Japan proper	1,400
Chosen	47	Chosen	145
Taiwan	23	Taiwan	90
Total	1,899	Total	1,627
		Balance	227

The increase in the amount of consumption was 27.5 per cent over the previous fertilizer year.

Nitrogen of Lime In accordance with the provisions of the Important Fertilizers Control Law the nitrogen manufacturers' association fixed the prices of the fertilizer which were recognized by the Department of Commerce and Industry in September, 1937 and were as follows: ¥1.83 per 22.5 kg. for September and October, ¥1.86 for November, ¥1.89 for December. Later the quotations for January-July, 1938, were fixed as follows: ¥1.91 for January and ¥1.93 for February-July, 1938.

Rise in Price The prices of fertilizers soared 29 per cent in average over the prices in October, 1936, largely because of trade and foreign exchange control, with superphosphate of lime rising highest by 67 per cent, followed by rape-seed cake from Manchoukuo and cotton-seed cake from China. Ammonium sulphate was also 19 per cent higher in spite of the Governmental control mentioned above.

RATE OF RISE IN PRICES OF FERTILIZERS AT END OF 1937

(Compared with October, 1936)

Bean cake	21%	Bean cake (ground)	25%
Herring cake	25%	Rape-seed cake	47%
Ammonium sulphate	19%	Nitrogen of lime	6%
Cotton-seed cake	37%	Potassium sulphate	15%
Sardine cake	23%	Average	29%

MONTHLY QUOTATIONS OF FERTILIZERS IN 1937

(In yen)

	Nitrogen of Lime		Superphosphate of Lime		Bean Cake	
	High	Low	High	Low	High	Low
January	1.87	1.85	1.30	1.25	5.23	4.98
February	1.87	1.85	1.32	1.30	5.19	4.91
March	1.87	1.74	1.50	1.35	5.43	4.90
April	1.78	1.72	1.85	1.50	5.73	5.45
May	1.78	1.73	1.85	1.60	5.74	5.31
June	1.73	1.64	1.80	1.65	5.30	5.03
July	1.70	1.68	1.85	1.70	5.61	5.22
August	1.80	1.75	1.96	1.88	5.07	4.90
September	1.83	1.80	2.00	1.95	5.08	4.74
October	1.85	1.85	2.05	1.95	5.14	4.95
November	1.88	1.88	2.10	2.05	5.28	5.19
December	1.91	1.91	2.15	2.05	5.49	5.12

Statistics

The value of production and consumption of various kinds of fertilizers are to be found in the following tables:

THE VALUE OF FERTILIZERS PRODUCED IN JAPAN PROPER 1927-1936

(Unit ¥1,000)

Year	Fertilizers Which Require a Licence for Production					Fertilizer not Requiring Any Licence for Production	Total
	Animal	Vegetable	Chemical	Mixed	Miscellaneous		
1927	21,139	37,039	70,423	41,820	165	26,000	196,585
1928	22,254	39,667	82,483	53,112	318	26,000	223,834
1929	19,619	43,521	87,284	60,116	217	26,000	236,757
1930	12,703	30,061	76,953	38,551	62	26,000	184,330
1931	13,092	24,083	61,557	25,910	85	26,000	150,727
1932	19,678	25,806	81,798	30,659	47	26,000	183,988
1933	25,891	31,563	102,026	42,408	47	26,000	227,935
1934	30,026	33,358	109,867	42,812	86	26,000	242,129
1935	27,612	36,395	150,988	53,528	100	22,000	290,625
1936	34,738	41,271	179,178	57,802	113	20,338	313,125

CONSUMPTION OF FERTILIZERS IN JAPAN PROPER

(Unit in ¥1,000)

Year	Manufactured under License	Fertilizers Sold on the Market			Total	Self-supplied Fertilizers	Grand Total
		Manuf'd without License	Balance of Exports and Imports	Raw Materials for mfg. Fertilizers			
1927	170,585	26,000	150,754	57,520	289,819	934,740	624,559
1928	197,834	26,000	141,296	69,824	295,306	326,290	621,596
1929	210,750	26,000	156,597	77,265	316,089	334,250	650,339
1930	158,330	26,000	110,393	50,508	244,215	282,270	526,685
1931	124,727	26,000	74,028	39,437	185,318	251,280	436,598
1932	157,989	26,000	56,690	44,907	195,772	260,270	456,042
1933	201,936	26,000	57,824	62,936	222,824	297,900	520,724
1934	216,130	26,000	58,320	71,609	228,841	299,920	528,761
1935	268,625	22,000	71,014	84,938	276,701	328,650	605,261
1936	313,102	20,338	76,500	91,500	318,400	355,500	673,940

NUMBER OF PERSONS ENGAGED IN THE FERTILIZER BUSINESS

Year	Manu-fac-turers	Im-porters	Importers of Fertilizers from Colonies	Traders	Year	Manu-fac-turers	Im-porters	Importers of Fertilizers from Colonies	Traders
1928	23,822	1,146	437	45,895	1933	23,083	1,035	453	41,614
1929	23,924	1,132	436	45,644	1934	23,529	1,004	451	40,855
1930	23,564	1,105	432	45,098	1935	23,683	995	470	40,563
1931	23,334	1,072	428	43,913	1936	23,788	991	456	40,548

Cement

History

In 1871, cement works were established by the Government in Fukagawa, Tokyo. This was the origin of the cement industry in Japan. For ten years the works gradually expanded so that by 1891, the total capital invested in the industry was ¥1,000,000, the works numbered ten and the capacity was about 300,000 barrels a year.

In 1898, there were sixteen works with an aggregate capacity of 1,000,000

bbls, and imports were entirely excluded. In 1912, there were nineteen companies and twenty three mills. The total capital invested amounted to ¥18,000,000 while the capacity increased to 4,000,000 bbls.

During the World War, the industry enjoyed unprecedented prosperity and expanded rapidly. New companies were formed and new mills added. At the end to 1926, companies numbered twenty-one with thirty four mills, the total authorized capital was ¥118,000,000 of

which ¥85,000,000 was paid up, and the total production capacity increased to 17,500,000 bbls.

During the last twenty years, demand for cement increased every year with five exceptions, there was a 2% decrease in 1912 and a 10% in 1915 and 1919. The average rate of increase was about 11%. But in 1930, domestic consumption suddenly decreased by 12%, the first time that any such sharp decrease had ever been experienced. The decrease was due to the general depression and the economic retrenchment policy of the Government following the removal of the gold embargo in January, 1930. In 1931, there was a further decrease, but in 1932, with general activity in industry being felt, there was some recovery over the previous two years.

The Industry in Recent Years

For some years in the past, the interest of cement industry in Japan centred on the question of the adjustment of over-extended capacity of production. The result is a large curtail-

ment of production.

In 1925 capacity was about 50 per cent larger than the output, which became almost 100 per cent in 1934. In recent years the greatest consumption of cement, including domestic consumption and export, was 480,000 tons of May, 1934, while the production capacity at the end of November of the same year was 1,020,000 tons a month. For almost a year 57 per cent of the Cement Association's (Cement Rengokai) capacity has been curtailed.

The cause of this abnormal condition of the industry is found in the fact that in fixing production curtailment ratio of the member companies of the Rengokai, it has been based on the capacities of production of the members. This led the member companies to expand capacities to get larger shares of business. The situation culminated in the latter part of 1934 in forcing the Department of Commerce and Industry to apply the Major Industries Control Law to the cement industry.

PRODUCTION OF CEMENT

(Compiled by the Ministry of Commerce and Industry)

Year	Portland Cement		Others Barrels	¥	Total value in Yen
	Barrels	Y			
1930	14,562,558	50,749,224	3,358,179	10,530,398	61,279,622
1931	15,885,398	51,779,580	3,052,971	9,837,362	61,616,942
1932	17,215,073	67,782,953	142,599	450,254	68,233,207
1933	21,789,392	84,566,744	153,926	515,065	85,081,099
1934	26,689,637	90,814,136	39,002	1,389,466	92,203,602
1935	30,854,313	99,146,671	706,233	1,693,554	100,840,225
1936	32,375,874	95,591,214	2,085,229	5,706,847	101,298,061

CONSUMPTION OF CEMENT CLASSIFIED BY USES

(In 1,000 metric tons)

Uses	1935			1936			1937		
	1935	1936	1937	1935	1936	1937	1935	1936	1937
Railways	235.2	246.7	284.7	Mining	80.0	62.3	101.5		
Electric works	300.6	248.1	421.4	Retails	1,255.3	1,268.8	1,300.7		
Harbours	109.3	102.2	109.0	Cement products	115.1	111.2	162.1		
Roads and bridges	264.5	267.8	239.8	Miscellaneous	14.0	20.6	29.3		
Other public works	376.0	373.5	374.6	Total	3,643.9	3,730.1	4,163.4		
Buildings	1,073.0	1,028.7	1,148.9						

EXPORTS OF CEMENT

(Quantity in tons and value in ¥1,000)

Descriptions	1934		1935		1936		1937	
	Qty	Value	Qty	Value	Qty	Value	Qty	Value
Manchoukuo	9,016	168	3,968	65	3,971	59	228	13
Kwantung L. T.	221,088	4,119	108,682	2,001	107,198	1,874	13,227	216
China	22,662	263	22,357	237	22,550	250	13,249	138
Hong Kong	62,235	668	70,003	716	54,910	581	15,687	151
British India	34,242	418	17,165	234	12,497	170	15,558	164

Descriptions	1934		1935		1936		1937	
	Qty	Value	Qty	Value	Qty	Value	Qty	Value
Straits Settlements	65,240	764	84,595	958	90,299	994	81,830	877
Dutch East Indies	52,564	667	44,532	549	48,978	606	84,480	1,044
Philippines	3,022	26	1,018	16	2,534	35	8,060	102
Others	70,841	939	302,739	3,301	298,224	3,429	353,795	4,039
Total	539,905	8,038	655,083	8,081	702,164	8,001	586,312	6,836

1937 Cement Industry

The China incident seriously affected the cement industry in 1937, the bright prospects which were evident in the first half of the year becoming suddenly dark in the second half, the normal production being curtailed to a considerable extent. But with the termination of the hostilities and the readjustment of relations between Japan and China an epochmaking reconstruction and rehabilitation will begin in China and therefore a great future is promised for the cement industry.

CURTAILMENT OF PRODUCTION OF CEMENT

(Percentage)

	1936		1937	
	Japan Proper	Korea	Japan Proper	Korea
January	55.0	63.0	—	—
February	55.0	63.0	—	—
March	57.0	61.0	—	—
April	58.5	58.0	—	—
May	58.5	50.0	—	—
June	58.5	56.0	36.0	—
July	58.5	56.5	36.0	—
August	58.5	56.0	36.0	—
September	59.5	60.0	39.0	—
October	59.5	62.0	41.0	—
November	59.5	62.0	54.0	—
December	63.0	65.0	63.0	—

Control in Korea The law for controlling important industries was applied to Korea also in March, 1937, and understandings were arrived at among the Asano Cement and twenty-one other cement companies on the price of cement and curtailment of their production, while license was made necessary for new establishments or expansion. The cement trade between Japan proper and Korea was regulated in order to restrict the import of cement to Japan proper to the amount of 130,000 tons during 1937 so that the pressure of Korean cement on the market in Japan proper was mitigated.

Commission for Improvement A commission for the improvement of

cement manufacturing industry was organized under the auspices of the new Bureau of Industrial Control, in the Ministry of Commerce and Industry, in August, 1937, and matters relative to the production and price of cement, protection of small cement companies, establishment of new companies, shipment, and the effect of the China incident on the industry, etc. are studied by the commission.

Increase of Stock Shipments of cement after July began to show a decreasing tendency, although the shipments in October showed an increase of 13 per cent over those of the same month in 1936. The restriction of the use of steel to a quantity not exceeding 50 tons for a building and the enactment, toward the end of 1937, of laws pertaining to the movement of capital and the economization of important commodities reduced the demand for cement in building and civil engineering works which usually consume about 50 per cent of cement in Japan proper. The stocks of cement and clinker which were reduced to 312,800 tons at the end of May from 426,000 tons at the end of February again increased to 468,200 tons at the end of September, while the figures for other items relative to demand and supply were generally diminished. The figures for stocks went down somewhat in the following 3 months, but still kept up the 400,000 ton mark.

Capacity of Production The production capacity of cement companies is on a steady increase in spite of the adverse business conditions. The monthly production capacity of the member companies of the Cement Manufacturers' Association was 835,000 tons in January, 1937. It increased to 882,000 tons in November, and 900,000 tons in December, an increase of 65,000 tons over 1936. Japan proper may be able to get a supply of cement amounting to 1,230,000 tons monthly including 200,000 tons of cement produced by companies outside the Association and 130,000 tons imported from Korea.

**EXPANSION OF THE PRODUCTIVE
POWER OF THE CEMENT MANU-
FACTURERS' ASSOCIATION**

 (Monthly Capacity)
(In 1,000 tons)

	1936	1937
January	792	836
February	792	837
March	791	861
April	792	861
May	793	861
June	792	872
July	802	873
August	802	882
September	815	882
October	815	882
November	815	882
December	835	900

Rise in Cost The rise in cost of production in 1937 badly affected the profit of cement companies. According to the understanding arrived at among cement companies the price of cement was reduced by ¥1.30 per ton. But the rise in price of material inevitably brought up the production cost.

**PRODUCTION COST OF CEMENT
PER TON**

(In yen)

	Second First Second		
	Half of 1936	Half of 1937	Half of 1937
Manufacturing expenses	6.50	6.88	8.30
Receptacles	1.60	2.00	2.20
Packing and freightage	2.00	2.00	2.60
Working expenses	2.00	2.30	2.50
Total	12.10	13.30	15.60

SUPPLY AND DEMAND OF CEMENT IN 1937

(In metric tons)

	Production Capacity			Shipments to Japan Proper
	Monthly Capacity	Cement	Clinker	
1933 Total	—	4,781,031	4,728,289	3,961,391
1934 "	—	4,729,994	4,803,113	3,856,879
1935 "	—	4,500,362	4,490,648	3,515,224
1936 "	—	4,264,475	4,359,188	3,730,192
1937 January	836,800	322,678	325,217	260,049
" February	837,990	320,254	321,510	269,495
" March	861,050	395,096	389,793	309,153
" April	861,470	439,036	422,742	364,355
" May	861,470	476,168	449,388	412,026
" June	872,580	412,258	420,711	327,484
" July	873,530	399,653	414,828	338,689
" August	882,760	399,761	440,219	347,284

The quotation of cement in Tokyo and Yokohama was a little more than ¥18.00 per ton in 1937 and yielded a profit of about ¥2.30 per ton against ¥7.90 in the second half of 1936.

Extension to North China The total annual output of the ten Chinese cement companies is estimated at 1,170,000 tons, and the actual shipment by these companies to districts in North China amounts to 100,000 tons, against the demand amounting to roughly from 250,000 to 330,000 tons. The leading Japanese cement companies such as Asano, Onoda, Iwaki, Osaka Ceramic and Ube are preparing to gain larger markets in North China in 1938 and after. The exports of cement by the leading Japanese companies to North China in 1936 and 1937 were as follows:

**EXPORTS OF CEMENT TO NORTH
CHINA IN 1936 AND 1937**

Company	(In tons)	
	1936	1937 (Jan.-Nov.)
Onoda	15,400	17,308
Asano	6,948	9,306
Oita	30	—
Ube	998	1,000
Total	23,376	27,614

At the end of 1937 Japanese cement companies met together to consider the question of a joint exportation of their products to North China, in view of the prospective increase of demand for cement in that area with the advancement of reconstruction works and the revision of tariff rates which had been prohibitive, and arrived at an understanding.

	Production Capacity			Shipments to Japan Proper
	Monthly Capacity	Cement	Clinker	
" September	882,760	366,470	376,731	331,905
" October	882,920	400,647	394,090	399,397
" November	882,920	376,444	372,251	362,827
" December	900,650	341,928	347,998	339,999
" Total	10,436,900	4,650,393	4,666,478	4,163,462

	Exports to Foreign Countries	Shipments to Manchoukuo	New Contracts	Outstanding New Contracts	Stocks
1934 "	319,954	449,523	4,558,200	479,800	241,500
1935 "	432,599	123,280	4,488,300	675,700	296,000
1936 "	351,849	157,252	4,488,300	797,300	382,400
1937 January	21,774	440	338,716	845,096	442,536
" February	37,270	320	375,265	909,619	426,093
" March	68,117	613	523,747	976,116	358,565
" April	71,844	1,885	546,304	1,050,270	319,859
" May	38,987	4,375	692,285	1,230,543	312,928
" June	35,638	2,416	412,066	1,318,397	365,437
" July	44,776	767	378,642	1,302,414	393,798
" August	19,378	500	392,906	1,331,994	467,968
" September	41,482	597	340,460	1,286,532	468,326
" October	27,374	400	347,586	1,185,158	433,291
" November	12,078	345	297,961	1,096,732	428,301
" December	17,292	—	297,747	1,015,790	416,500
" Total	434,190	12,658	—	—	—

Ceramics
Introduction

Pottery making has an old history in Japan. As far back as can be traced in history some potters appear to have had their secret proprietary methods of production. In the Meiji Era, especially after the Russo-Japanese War, along with the advance in industry in general, pottery making was industrialized, a procedure which was thought difficult of accomplishment, and to-day annual production amounts to from ¥60,000,000 to ¥80,000,000 in value, while exports amount to over ¥30,000,000. It is now one of the principal industries in Japan.

The chief places of production are Nagoya and Seto, both in Aichi prefecture, and the eastern part of Gifu prefecture. The quantity produced in these places amounts to about 70% of the country's total production. Seto is such a famous place for pottery that the Japanese commonly call chinaware "Seto-mono." Besides the products named above "Kutani" ware of Ishikawa prefecture, "Shirazu" ware of Kyoto prefecture, and "Arita" ware of Saga prefecture, are all famous though produced in small quantities only. Nagoya district is one of the largest pottery producing places in the world.

Pottery was being made, crudely ad-

mittedly, at the time of the Emperor Jimmu, the first Emperor of Japan, who lived about 650 B.C. At the time of the Emperor Suinin, that is, 66 A.D., a Korean prince was nationalized, and one of his retainers, who knew the potter's art, was able to give instruction on foreign manufacturing methods. Later, at the time of the Emperor Kammu, i.e., 781 A.D., pottery was imported from China, and the art made further progress.

In 1221 A.D., a man named Kagemasa Kato studied the art of pottery making in China. When he returned, he settled in Seto village, Aichi prefecture, and made chinaware of superior quality, the origin of the present "Seto" ware.

After that, many master artisans arose and tea-things, rice bowls, pitchers, incense burners, etc., now of great rarity and value were produced.

Present Condition of the Industry

In 1936 total production of chinaware amounted to ¥108,171,711, while there were as many as 6,686 factories and 63,955 employees. The value of total production including tiles and drainage pipes reached ¥139,748,168.

The following table shows how this industry has developed recently.

FACTORIES AND PRODUCTION OF CERAMICS

(Compiled by the Ministry of Commerce and Industry)

Year	Facto- ries	Opera- tives	Table- wares	Furni- tures	Building Materials	Insu- lators	Toys	Others	Total
(In yen)									
1928	6,862	47,108	43,994,120	14,446,499	3,242,134	8,028,988	1,056,617	5,955,760	76,726,018
1929	6,685	44,366	41,866,937	13,690,379	3,133,863	7,210,453	1,074,811	7,791,027	74,767,470
1930	6,435	41,226	34,737,320	11,879,836	2,235,018	6,006,096	935,719	6,625,941	62,419,930
1931	6,353	40,320	31,926,067	9,388,264	2,304,914	4,154,698	1,103,012	5,320,929	54,197,864
1932	6,474	43,948	35,733,104	11,593,447	2,934,639	4,742,886	2,595,435	7,663,341	65,282,852
1933	6,586	53,292	45,204,776	14,910,054	6,131,345	5,886,047	2,003,566	10,110,712	85,246,500
1934	6,473	57,172	54,001,916	15,573,166	5,876,879	6,166,129	2,981,099	7,764,502	92,363,691
1935	6,624	61,135	54,616,818	15,504,495	6,754,686	9,245,261	3,471,091	9,775,659	99,368,019
1936	6,686	63,955	58,801,046	16,845,708	7,357,239	10,865,463	3,878,602	10,423,633	108,171,711

Factories and Production of Tiles and Drainage Pipes

(Value in yen)

Year	Tiles			Drainage Pipes		
	Facto- ries	Opera- tives	Value	Facto- ries	Opera- tives	Value
1928	13,012	42,905	29,814,424	878	3,193	4,542,070
1929	12,485	40,695	26,808,109	838	3,319	4,570,015
1930	11,962	39,066	19,752,639	832	3,150	4,301,342
1931	11,725	38,072	18,345,402	784	2,865	3,814,048
1932	11,445	38,268	18,070,015	827	2,966	3,092,524
1933	11,213	37,628	19,125,574	918	3,310	3,760,772
1934	11,021	38,680	20,740,446	937	3,453	4,229,313
1935	10,809	39,398	21,277,565	944	3,913	4,431,993
1936	10,688	39,576	23,076,803	891	3,593	4,964,409

Exports of Chinaware Though exports of chinaware amounting to ¥1,300,000 were made as early as 1886, the exports business did not develop to any great extent until the Russo-Japanese War. In 1904, the Nippon Toki Kaisha, Ltd., was organized, to be quickly followed by the Toyo Toki Kaisha, Ltd., and the Nagoya Seito-sho. Each of these companies established large mills with up-to-date equipment and began to produce chinaware on a big scale. Painstaking studies were made to improve the products and build up an export business, and these, together with other special factors, account for the remarkably large increase in exports. The special factors are:

(1) Japan is able to produce specially

thin chinaware that other countries cannot.

(2) Japanese artisans are especially clever at their work.

(3) The cost of production is reasonable.

Just at the time when the industry was organized on a modern basis, the World War broke out. Pottery works in belligerent countries in Europe were closed down and exports from Japan increased by leaps and bounds. A temporary set-back was experienced when the War ceased, but a recovery was soon made and there was a steady growth until 1929, then there was a falling off until 1932, when some slight gain was made over the previous year.

EXPORTS OF CHINAWARE TO DIFFERENT COUNTRIES

(In ¥1,000)

Countries	1931	1932	1933	1934	1935	1936	1937
Manchoukuo	—	—	531,128	1,238	1,222	1,391	2,222
China	617	554	991	1,387	1,339	1,127	1,145
Kwantung L. T.	560	756	1,193	2,084	2,162	1,859	2,253
Hong-Kong	243	142	247	442	493	481	396
British India	1,391	3,463	3,965	3,204	3,529	3,695	4,210
Straits Settlements	210	374	900	1,290	763	514	1,174
Dutch East Indies	1,711	2,424	3,728	3,269	2,133	2,382	3,189

Countries	1931	1932	1933	1934	1935	1936	1937
French Indo-China	18	36	144	134	245	270	231
Philippines	400	635	959	580	945	1,148	1,431
Great Britain	696	825	1,296	1,161	1,186	1,275	1,171
France	1,079	311	643	355	261	317	426
Germany	199	100	146	221	226	245	303
Italy	195	236	371	343	110	—	—
Holland	1,200	848	981	761	498	607	542
U. S. A.	6,634	6,180	10,180	14,310	15,776	15,530	19,460
Canada	1,139	1,317	1,399	1,508	1,458	2,025	2,038
Argentina	174	150	395	628	767	595	1,259
Brazil	79	118	370	554	672	461	1,036
Egypt	146	408	438	627	488	495	364
Australia	665	1,768	2,707	2,331	2,804	2,291	2,598
Others and Total	19,307	22,937	35,634	41,879	43,318	43,548	53,971

Domestic Consumption There are no statistics to rely upon for the exact amount of domestic consumption, but if we subtract exports from the total production we have an approximate value. Figures shown in the second column of the first table "Factories and Production of Ceramics" give some idea of the amount. Though tile making is growing fast on account of the increase in building of Western style houses, the market had been depressed because of lack of control

over production and sales until 1934 when it began to regain prosperity.

The peculiarity about chinaware intended for domestic use is that it must be made by small factories on the family basis. The reason is that the taste of the Japanese for chinaware is very varied, differing according to each individual as to the form, colour, design, etc., and making it impossible to produce on large scale mass production principles.

Glass and Glass Manufactures

Origin and Development

As far as historical record shows, the art of glass manufacturing was developed in the Nara period, that is about 700 A.D. Later, techniques of manufacturing were imported both from the South Sea Islands and China, and put into practice in Osaka, Kyoto and Tokyo, where the industry developed. After the Meiji Restoration, the Government established a model factory to encourage the development of the industry and various attempts were afterwards made to make glass and glassware both by the Government and by individual concerns, but it was not until after the Russo-Japanese War of 1904-1905, that the industry made any great progress.

Present Condition

Due to the strenuous efforts of manufacturers and advantages from a low exchange rate since the gold embargo was replaced, the glass industry in Japan is doing remarkably well.

Glass Tableware Glass tableware was early manufactured in Kagoshima and the old province of Satsuma in Kyushu Island. After the Meiji Restoration it was manufactured by the Shinagawa

Shoshi Seizosho (Shinagawa Glass Co.) which was under Government control. At present it is manufactured by the Fukushima Glass Co. organized in 1896, Koidé Shoshi Seizosho (Koidé Glass Co.) established in 1898, Marasa Glass Co., organized in 1918, and the Kawai Shoshi Shokki Seizosho (Kawai Table Glassware Co.) organized in 1920, etc. Production by these and other manufacturers is given below.

Other Glass Articles Glass articles for scientific and medical purposes were manufactured as early as 1850. There are many manufacturers of these articles in Tokyo district.

The manufacturing of eye-glasses was first practised as early as 1600. In 1873, a certain Mr. Matsugoro Asakura from Tokyo, went to Austria and learned the art of manufacturing eye-glasses on modern principles. His son and several others are now manufacturing them.

Red glass was manufactured by the Kagoshima clan prior to the Meiji Restoration, and later by the Shinagawa Shoshi Seizosho, which was under Government control. Also a certain Mr. Tokijiro Iwashiro succeeded in manufacturing lenses for the use of search-lights, and light-houses. The right of

manufacturing these lenses was later transferred to the Nippon Kogaku Kogyo Kaisha, Ltd., (The Nippon Optical Science Industrial Co., Ltd.). Mr. Iwashiro's son later succeeded in manufacturing cut glass.

Glasses for optical work were mostly imported from Germany before the World War, but when the supply was cut off by the war, it was determined that "lenses for optical science must be produced at home at any cost." The Nippon Kogaku Kogyo Kaisha, Ltd., to which all the results of studies made by the naval arsenal were transferred in 1914, and the Osaka Industrial Research Institute, which started research work in 1921, continued investigations. The Osaka Institute succeeded in 1925 in discovering a formula for manufacturing lenses, superior to German makes at reasonable cost. The Nippon Kogaku Kogyo Kaisha, Ltd., also succeeded in finding a way to make these lenses, and it is probable that the importation of lenses of these classes from Germany will, in a not distant future, become unnecessary.

Glasses for the chemical industry, that is, hard glasses, are manufactured in several mills in Japan. High grade hard glass which is not in any degree inferior to the best imported is now manufactured by several firms for thermometers, gauges and the chemical industry.

Sheet Glass

Though many efforts were previously made to manufacture sheet glass, it was not until 1904 that a Mr. Magochi Shimoda, after two years of experi-

mental manufacture, was successful in producing a product that could be put on the market.

In 1907, the Asahi Glass Co., Ltd., was organized in Amagasaki, Hyogo prefecture, by the family of the late Baron Yanosuké Iwasaki. An expert and five skilled workmen were brought over from Belgium and commenced to manufacture it from 1909. The company struggled for 7 years against difficulties in technique and pressure of foreign competition, and in the end succeeded in producing about 120,000 cases a year. In 1914, a patent, which enabled the company to produce sheet glass by a mechanical process was bought from the American Window Glass Co., Ltd., and a factory was established at Makiyama in Tobata, Fukuoka prefecture. On account of the cutting off of imports from Europe during the World War, the company not only increased production, but exported their products to places far afield as South Africa and London. In 1916, the company established a factory in Tsurumi, Yokohama, and in 1917 another in Yawata, Fukuoka prefecture. In 1923 and 1924, the factories in Makiyama and Tsurumi were extended, and at present the company is capitalized at ¥40,000,000 and has a productive capacity of 545,000,000 sq. feet, besides soda products, calcium chloride, fire brick and corhart electrocast-brick. Its head office is now at Marunouchi, Tokyo.

At present the Asahi Glass Co. Ltd., the Nippon Sheet Glass Co. Ltd., the Nippon Thick Glass Co. Ltd., and the Tokunaga Sheet Glass Co. Ltd. are manufacturing sheet glasses.

SUPPLY AND DEMAND OF SHEET GLASS

(Unit: Case which contains 100 sq. feet of sheet glass)

	Production	Imports	Exports	Domestic Consumption
1928	2,107,176	365,891	32,153	2,440,914
1929	1,803,863	300,106	58,416	2,045,553
1930	2,045,611	356,752	57,897	2,344,466
1931	2,220,206	300,023	28,080	2,522,149
1932	2,305,626	247,144	51,204	2,501,566
1933	2,802,555	222,896	137,096	2,888,355
1934	2,897,747	179,476	283,183	2,794,040
1935	3,131,212	94,445	253,727	2,971,930
1936	3,550,339	137,740	251,207	3,436,872
1937	4,285,327	78,417	278,668	4,085,076

PRODUCTION OF GLASS AND GLASSWARE

(Value in ¥1,000)

Year	Table Ware	For Decorative Purposes			For Illuminating Purposes		Bottles
		Beads and Balls	Arm Rings	Others	Shades and Globes	Others	
1928	2,956	—	1,015	—	3,193	—	17,026
1929	3,360	465	1,070	175	1,326	435	17,813
1930	2,870	893	859	79	838	244	14,765
1931	2,455	71	570	68	388	944	10,927
1932	4,193	373	683	357	391	733	11,193
1933	4,143	302	696	159	499	1,200	16,845
1934	5,454	469	853	246	471	1,414	20,349
1935	6,631	239	1,030	291	569	1,119	23,716
1936	6,472	423	1,972	227	1,928	754	25,319

(Quantity in 1,000; value in ¥1,000)

Year	Sheet Glass Thickness under 2.2 mm.		Sheet Glass Thickness under 4 mm.		Others		Looking Glasses		Others and Total Value
	Quantity cases	Value	Quantity cases	Value	Quantity cases	Value	Quantity cases	Value	
1928	—	—	—	15,145	—	—	—	—	44,681
1929	1,606	12,121	53	426	143	2,256	45	789	44,669
1930	1,863	12,915	169	2,291	12	220	44	25	40,583
1931	2,104	13,690	99	1,010	16	332	53	128	34,338
1932	1,757	9,908	337	2,137	210	2,124	80	235	37,233
1933	2,039	15,237	427	3,988	335	3,147	74	288	52,526
1934	2,124	15,335	513	4,449	259	3,641	0.450	433	58,857
1935	1,009	7,642	1,770	14,196	350	5,141	0.270	368	68,173
1936	956	6,699	2,161	17,146	369	8,107	76	497	78,360

EXPORTS OF GLASS AND GLASSWARE

(Value in ¥1,000)

Kinds	1935		1936		1937	
	Quantity	Value	Quantity	Value	Quantity	Value
Window glass in 1,000 sq. ft.	25,327	1,219	25,120	1,239	27,866	1,560
Thermos in 1,000 doz.	301	2,284	395	2,885	639	3,131
Glass bottles in 1,000 doz.	25,285	5,741	27,332	5,834	32,193	6,162
Glass cups in 1,000 doz.	6,776	3,891	7,455	4,097	8,942	5,064
Glass tableware in 1,000 doz.	1,368	1,242	1,548	1,415	2,238	2,541
Watch glasses in gross	132	181	133	162	146	183
Glass beads and balls in 100 kin	25	989	20	1,056	26	1,432
Spectacles in 1,000 pcs.	19,813	2,055	27,016	2,562	30,885	3,243
Looking glasses in 1,000 pcs.	77	3,572	75	3,413	3,032	3,955
Other glasses & manufactures	—	2,159	—	2,981	—	6,296
Total	—	23,337	—	25,627	—	33,572

IMPORTS OF GLASS

(Value in ¥1,000)

Kinds	1935		1936		1937	
	Quantity	Value	Quantity	Value	Quantity	Value
Uncoloured plate glass under 2.2 mm. in 1,000 sq. m.	476	337	1,120	694	590	584
Uncoloured plate glass under 4 mm. in 1,000 sq. m.	41	287	23	147	18	107
Other uncoloured plate glass in 1,000 sq. m.	116	1,810	79	953	46	609

Kinds	1935		1936		1937	
	Quantity	Value	Quantity	Value	Quantity	Value
Other plate glass in 1,000 sq. m.	182	459	56	226	72	293
Plate glass having inlaid metal wire or net in 1,000 sq. m.	158	637	6	86	19	133
Dry plates for photography in 100 kin.	11	1,736	6	710	4	491
Others	—	1,053	—	1,025	—	1,779
Total	—	6,322	—	3,845	—	3,909

Lacquer-ware

Historical and General

Industry Inherent The Japanese are a people skilled in handiwork. Prior to the introduction of modern productive industries from the West in the early years of Meiji, the Japanese were separated from Occidental civilization and culture and the various handicraft industries that had come down from ancient times were in a flourishing condition and in a state of development peculiar to the country. The industries especially referred to are the silk, porcelain, earthen-ware, lacquer-ware, cloisonné-ware, gold lacquer-ware and the metal engraving.

The lacquer-ware industry existed in ancient times. As was the case with the ceramic industry, it progressed with the introduction of Buddhism and of advanced methods from China, but did not make so notable a development as in the case of the textile, ceramic or other industries. With the rise to favour of the tea ceremony in the Ashikaga Age, Kyoto monopolized the production of lacquer-ware, although wares of nearly the same kind, such as "Wajimanuri" and "Shunketnuri" were produced in fairly large quantities in different places and were largely used for table-ware. After the Restoration of Meiji there was a considerable decline in the demand for such wares as "Noshironuri," "Wakanuri" and "Tsuigarunuri" which had been popular in the Tokugawa Period, while the output of "Wajimanuri," "Kurodenuri," and "Imazunuri" which had principally been used as table-ware greatly increased as they were being exported in increasingly large quantities.

Urushi Obtainable Only in the Orient Japan is the only country in the world enjoying world-wide renown in the technical art of lacquer-ware manufacture. The various industrial arts of Japan such as the porcelain and weaving owe their origin to China or Western countries, but as regards lacquer, Japan acknowledges no teacher; from remote anti-

quity, especially in the technique of relief lacquer the art has developed without aid from any foreign methods of manufacture or materials. For more than two thousand years the craftsmen of Japan, having striven to improve, finally attained a degree of wonderful skill. The production of lacquer-ware is confined to Oriental countries where only lacquer juice, known as urushi, is obtainable—Japan, China, Korea and India,—although there is an evident tendency in Western countries in recent years to manufacture lacquer-ware of industrial art value. The application of mother of pearl, known as naire work, became common during the Nara Age. A large number of ancient examples of lacquer-ware that have served as models for succeeding generations are still kept in the Shosoin, the Imperial Treasure House in Nara. These represent products of the Tempyo period, when even large wooden buildings were lacquered. Among such buildings left standing are the Chuson Temple in Iwate prefecture and the Byodoin Temple in Kyoto prefecture. Embossed lacquer-ware was invented during the Kamakura Age, when tasteful designs of chrysanthemums and other flowers were in vogue.

From Toyotomi Downward A golden mother of pearl inkstone case in embossed lacquer with a chrysanthemum design is now treasured in the Hachiman Shrine at Kamakura. The pomp and glory of the third Ashikaga Shogun stimulated the art and resulted in the perfecting of embossed lacquer work and the extension of its application to articles of daily necessity. Hideyoshi Toyotomi accomplished his gigantic task of pacifying the country. Grandeur was a unique feature of his administrative policy and social and other life in those days. The grand Momoyama style, named after his palace, was reflected on the industrial arts. Koetsu relief lacquer was supreme and Kodaiji relief lacquer was also produced, representative lacquer products

of those days. When the third Tokugawa Shogun, Iyemitsu, came into power, he erected the great Nikko mausoleum and Zojoji Temple at Shiba, Tokyo for his grandfather and father respectively, and lacquer was amply applied to these buildings. During the reign of the fifth Shogun, Tsunayoshi, an exquisite technique attained its zenith, defying all the imitative powers of succeeding generations. It was applied to scabbards of swords, miniature medicine-cases (known as inro) and various articles used by the Daimyo. Notable lacquerers such as Kozumi Choju, Koma Ikyu, Ogata Korin and others flourished during this period. Since that time the production of lacquer has spread to various localities throughout the country, and unique local colour has been freely introduced into the design. Competition ensued as in all industrial articles, and some of the products of those days were exported abroad. Japanese industrial arts were almost wholly neglected during several years following the Meiji Restoration. Lacquered articles of artistic value were sold at ridiculously low prices and these were purchased by foreigners who had eyes for their value and who took them to their own countries. This provided an opportunity to introduce the Japanese lacquer art to foreign countries, but at the same time Japan lost many articles of both æsthetic and monetary value.

Its Fine Quality A French steamer was wrecked off Izu while outward bound from Japan laden with Japanese lacquer-ware that was to be exhibited at the Vienna International Exposition in 1873. The cargo was salvaged 13 months after the accident and the lacquer goods were found to be undamaged. On slight polishing they regained their former lustre and thus displayed the intrinsic value of this national art product. When the news of this salvaging and condition of the goods became known abroad the export trade took a sudden spurt forward, but there were traders who exported goods of poor quality, and did great damage to the credit and value of Japanese products in the eyes of foreign customers. Apart from defects in manufacture, some of the bad reputation which exported Japanese lacquer-ware has gained, is ascribed to the fact that some manufacturers are producing inferior articles on account of having been forced by exporters to lower prices, but of late years efforts have been made by the authorities concerned to remedy these evils.

How the Ware is Made

Lacquer Juice Lacquer juice forms the main material of the craftsmen. It is obtained from the lacquer (urushi) tree grown in Oriental countries and is a milky juice with a greyish-white colour. In air it undergoes an oxidizing process, becomes brown and finally solidifies. When solidified, it is not soluble in ordinary solvents and has an unusual resistance to acids. Its beautiful appearance and smooth feel defy paint and varnish. Lacquer juice is regarded as a botanical excretion and in normal conditions is stored in a fixed position in the tree. The tree is tapped by making a horizontal, slanting or V-shaped incision of 10 centimetres right to the sap, and from this the greyish-white juice oozes. Attempts have been made to obtain the juice by means of pressing the bark and leaves of the tree, or by using alcohol, but without success. The greyish-white product is called raw lacquer and is used for the initial application to the goods to be lacquered. As material for the finishing applications and colour lacquering the water is extracted from the juice, and various refining processes follow according to the result required. The chief ingredients of raw lacquer are Urshiol, 77.63%, gummy substance, 2.63%, carbonic substance 1.94% and water 17.81%.

Manufacturing Process Lacquer-ware manufacturing is divided into three stages, namely, the initial application, lacquering and relief lacquering. The process is further divided into different categories according to technical experience and skill. Wood, bamboo, paper, metal and porcelain are used as basic materials for initial lacquer applications. Wood is mostly used throughout the country, but wood has the drawback of swelling and contracting according to weather condition. Bamboo and paper are used for particular lacquer-ware making, while metal and porcelain are less commonly used. The initial application is made on the surface of the ware by means of a spatula or brush, the article is thus made water-proof and the absorption of lacquer applied to finish or fill in tiny holes or other defects is prevented. The finishing process is of course for the purpose of making the ware solid and smooth.

Lacquer is the best material for the initial application, though shibu-varnishing or glue-varnishing is also practised, especially for low grade wares. The juice of the astringent persimmon is

the chief substance of shibu, and with this is mixed powdered charcoal or other materials. Glue is also used as a raw material, but it is not much good for solidity. Glue-varnished wares are made mostly for export, and the bad reputation that modern Japanese lacquer-ware has in foreign markets is chiefly ascribed to these glue-varnished articles. Formalin is used to solidify these wares. As regards the finishing application, a proper amount of pigment is added to refined lacquer to make it coloured or transparent, and this is finely applied to wares that have been through the initial application. These are then kept in a wooden closet to avoid dust and allowed to dry. This is called fresh lacquering. When wares are dry, they are polished by charcoal.

Relief lacquering was evolved to give beautiful designs to wares after the finishing application had been gone through. Pictures or designs are painted on the articles by lacquer and before the lacquer is dry, gold, silver and other metallic dust or pigment is applied. Then polishing for the finishing touches takes place. This is called ordinary relief lacquering, but there are other methods of production and prices differ according to the extent of finish.

Of the two principal methods of manufacturing high-class goods, polished relief lacquering is one. When the ordinary relief lacquering process is completed, lacquer is once more applied to all the surface and the whole is then polished by charcoal, and the design is presented on the surface. The other is embossed relief lacquering, and this requires much time and skill. Designs are made in high relief and the ordinary relief lacquer is applied. Shells, corals, jewels and stones are often inlaid in lacquer-ware and to these are applied transparent or block lacquer, the product being known as aventurine-ground lacquer-ware. Gold dust is also applied in relief and this is known as flush painting. Another unique lacquering is the application of coloured lacquer coatings for as many as a hundred times, and when dry an exquisite design is carved on the ware. This process somewhat differs from relief lacquering but it forms one of those elaborate methods in the manufacture of the lacquer-ware which remains one of the outstanding products of the Japanese craftsman.

Production

Production of lacquer-ware in recent years was as follows:

FACTORIES AND PRODUCTION OF LACQUER-WARE

	Factories Operatives			Production Furnitures	Others (In yen)	Total
	Tableware					
1928	10,286	27,168	16,131,984	9,160,538	10,670,232	35,962,754
1929	10,350	30,078	26,004,026	8,249,723	9,613,133	33,866,882
1930	10,081	28,622	12,119,306	7,374,419	8,750,370	28,244,095
1931	10,056	27,975	10,717,856	6,899,725	8,041,112	25,658,693
1932	10,267	28,794	10,851,938	6,918,301	8,862,670	26,632,909
1933	10,784	30,431	12,139,600	8,012,675	9,419,390	29,571,665
1934	12,223	37,641	13,366,815	9,437,231	13,507,713	36,311,759
1935	11,170	36,217	14,189,283	9,983,004	14,227,619	38,399,906
1936	12,727	39,599	16,869,770	10,659,162	15,031,075	42,560,007

CHAPTER XXIII

MISCELLANEOUS INDUSTRIES (Continued)

Caustic Soda, Soda Ash, Bleaching Powder, Dyestuff, Fuel, etc.

Soda Ash Industry

Soda ash occurs in its natural state in some parts of the world, but in this country it has to be prepared from salt, and as salt is a Government monopoly the price is high, so when the Asahi Glass Company, in order to attain self-sufficiency, started the production of soda ash after the World War it did so on uneconomic basis, but the Government came along and by granting liberal subsidies to this and other concerns saved the industry and put it on a paying basis. Brunner, Mond and Company (British) and H. Ahrens and Company (German), who used to be the largest importers, were hit hard by this development in home production. The history of the growth of the soda ash industry in Japan is the history of strife between the Asahi Glass Company, backed by the Mitsubishi interests and protected by the Government, and these foreign concerns. The total production of soda ash in 1933 was 27,135 tons while 46,447 metric tons were imported. In 1935 Japan succeeded in exporting about 30,521 metric tons and has become more than self-sufficient in this article.

Caustic Soda

As a by-product of the production of caustic soda the poisonous gas chlorine freed. This gas is made into commercial bleaching powder, and in the past the commercial production of caustic soda was only possible if a good price was obtained for bleaching powder. The industry, therefore, was greatly dependent on this latter commodity for quantity production. As soda ash is now being produced cheaply, caustic soda is being manufactured from it so domestic production is increasing. The replacement of the gold embargo and the raising of the tariff virtually sealed the activity of the British importing concern, whose pressure was a great hindrance to the development of the Japanese soda industry, and self-sufficiency in the production of both soda ash and caustic soda has been thereby attained. Brun-

ner, Mond and Company has largely restricted its activities and home production has greatly increased. The Asahi Glass Company and Nippon Soda Kaisha, known as N. S. K., have recently expanded their equipment for producing soda ash to an annual productive capacity of 150,000 tons, which is about 30,000 tons more than the yearly domestic demand. The production of caustic soda in 1936 was estimated at 263,327 tons and in 1937 at 340,771 tons. In 1938 the production is expected to make a further increase by the establishment of the Toyo, Tokuyama, Chosen, Ube and Manchoukuo Soda companies.

Bleaching Powder

The demand for bleaching powder has become active since an improvement was registered by the paper manufacturing companies, who consume 70 per cent of the total production. The business solely depends on the rise and fall of the foreign-style paper manufacturing industry.

The Industries in 1937

The demand for soda continued to be active during 1937. The demand for caustic soda during the year amounted to 371,000 metric tons, while that for soda ash was 265,633, both showing a considerable increase over the previous year. The continued active demand is attributable to the activities in the rayon, glass, dyestuff and other chemical industries.

On account of the active demand, there was a slight shortage of supply although production increased. The quotations went up accordingly.

PRICE PER 100 KILOGRAMS

(In yen)

	Caustic Soda		Soda Ash	
	High	Low	High	Low
1934	22.00	17.80	11.50	9.00
1935	17.80	15.80	9.50	7.50
1936	15.80	10.50	9.50	7.50
1937	20.00	12.80	10.60	7.50

Conditions of Soda Companies The business conditions of the soda companies in the country were in a state of depression during 1936. The depression was worse in the latter half of the year than in the first half, with one or two exceptions. A recovery, however, started toward the end of the

year and a further improvement was seen from the beginning of 1937 when the quotations of soda began to rise rapidly.

The following is a table showing the changes in the business conditions of the soda companies during the past few years:

	Japan Soda Co.		Tokuyama Soda Co.	
	Percentage of Profit	Percentage of Dividend	Percentage of Profit	Percentage of Dividend
1st half of 1935	27.0	12.0	26.7	15.0
2nd half "	34.5	12.0	22.3	13.0
1st half of 1936	26.8	12.0	15.0	13.0
2nd half "	24.1	12.0	7.7	10.0
1st half of 1937	15.8	12.0	9.8	10.0
2nd half "	22.6	12.0	19.1	10.0

	Hokkaido Soda Co.		Asahi Electric Chemical	
	Percentage of Profit	Percentage of Dividend	Percentage of Profit	Percentage of Dividend
1st half of 1935	10.8	8.0	24.5	10.0
2nd half "	7.4	6.0	24.8	10.0
1st half of 1936	1.9	3.0	25.4	10.0
2nd half "	9.0	6.0	25.4	10.0
1st half of 1937	6.9	7.0	36.9	12.0
2nd half "	9.2	7.0	36.2	12.0

5 Year Programme of Salt Production To insure the supply of material for these industries the Monopoly Bureau, Finance Ministry, scheduled a 5 year programme of salt production in the near sea shores in 1936. It begins with 1937 and ends with 1941, and aims at a production of salt amounting to 3,267,000 metric tons in 1941.

Of the total, 631,000 metric tons will be produced in Japan proper and 2,636,000 metric tons in Formosa, Manchoukuo, Tsingtao, etc. The demand in 1941 is estimated at 3,342,000 metric tons including 923,000 metric tons for household use and 2,419,000 metric tons for industrial purposes.

PRODUCTION AND IMPORTS OF SODA ASH

Year	Production (In metric tons)		Imports	
	Production	Imports	Production	Imports
1928	30,928	78,649	1933	272,135
1929	43,583	76,116	1934	170,622
1930	57,233	65,206	1935	364,613
1931	93,244	54,336	1936	215,180
1932	134,807	46,434	1937	231,648

PRODUCTION, IMPORTS AND EXPORTS OF CAUSTIC SODA

Year	Production	Exports (In metric tons)		Imports	Supply
		Exports	Imports		
1928	28,700	33	58,583	87,260	
1929	57,382	22	42,388	99,550	
1930	34,738	17	37,592	72,313	
1931	48,536	10	41,595	90,121	
1932	75,116	2,238	28,185	101,063	
1933	131,709	5,116	12,477	139,070	
1934	164,834	12,293	9,928	162,469	
1935	213,319	17,495	19,936	215,759	
1936	263,327	23,911	11,587	251,003	
1937	340,771	3,676	27,429	364,524	

PRODUCTION AND EXPORTS OF BLEACHING POWDER

Year	Production Exports Supply (In metric tons)			Year	Production Exports Supply (In metric tons)		
	Production	Exports	Supply		Production	Exports	Supply
1928	46,325	3,080	43,245	1933	61,142	3,392	57,750
1929	50,756	3,109	57,647	1934	64,980	4,247	60,733
1930	49,471	3,446	46,025	1935	74,254	6,489	67,765
1931	45,005	3,544	41,461	1936	78,321	8,505	69,816
1932	47,485	2,858	44,627	1937	91,903	6,990	84,913

Soap Making

Development and Production

The industry was started early in the Meiji Era, but no great progress was made until after the Russo-Japanese War of 1904-1905, when machinery was introduced from abroad. During the World War, the industry enjoyed great prosperity, but the reaction was also very severe when it came in 1920. However, during those difficult times, the foundation of the industry became more consolidated and the quality of soap

improved a great deal.

Production of soap in Japan is as per the accompanying table. Tokyo and Osaka are the two principal places of production, the former producing about 50% of the total production in the country, while Osaka produces about 30%. Exports of soap, 90% of which is toilet soap, are made mostly from Osaka, to China and Kwantung Province. Imports amounted to ¥135,000 in 1936 and ¥146,000 in 1937.

PRODUCTION OF SOAP BY MILLS

Year	Production (In ¥1,000)						Total
	Toilet	Industrial	Medical	Laundry	Powdered	Others	
1927	23,339	1,849	—	—	—	—	36,141
1928	24,654	2,283	—	—	—	—	39,146
1929	22,690	2,370	5	10,199	1,767	1,908	38,942
1930	18,564	2,863	397	11,098	1,833	605	35,362
1931	17,246	1,480	173	7,561	2,083	1,355	29,900
1932	19,164	1,450	268	8,389	2,642	428	32,344
1933	21,243	2,658	194	9,584	2,992	1,118	37,691
1934	21,407	1,932	377	13,756	3,331	2,037	42,843
1935	23,328	3,295	477	15,537	4,127	3,491	50,258
1936	23,249	3,742	306	18,222	3,470	2,915	51,908

Vegetable and Animal Oils and Fats

Introduction

For lighting purposes vegetable oils have been used in Japan for centuries. In earlier days perilla oil was used but this was later replaced by rapeseed oil. The production of these oils on an industrial basis only developed after the Russo-Japanese War of 1904-1905.

Production of hardened oil in Japan during 1936 amounted to 75,663 metric tons in contrast to 82,056 tons in 1935. It is used mostly for soap making, candles and dietary purposes. Even during the time that Japan was on gold, hardened oil was exported, so after the gold embargo was imposed exports increased. The exports amounted

to ¥10,003,000 in 1936 and ¥10,195,000 in 1937.

The principal vegetable oils produced are soya bean and rapeseed. Linseed oil, perilla oil, hempseed oil, wood oil, sesame oil, cotton-seed oil, castor oil, groundnut oil, copra oil, camellia oil, etc., are also produced in considerable quantities. The production of soya bean oil in 1936 was 50,699 metric tons and rapeseed oil was 39,099 metric tons.

Of the principal vegetable oils produced in Japan, only wood and camellia oils and vegetable wax are pressed from domestically grown seeds, all the others are pressed from materials from abroad. The amount of exports of soya bean oil, rapeseed oil, and other vegetable oils was ¥35,496,000 in 1936 and ¥23,662,-

000 in 1937. The importation was ¥7,370,000 in 1936 and ¥10,954,000 in 1937. Statistics for the vegetable and animal oil industry follows:

PRODUCTION OF VEGETABLE OILS

Year	(In yen)					
	Rapeseed Oil	Sesameseed Oil	Groundnut Oil	Cottonseed Oil	Copra Oil	Soya bean Oil
1927	15,228,035	2,443,698	229,845	1,913,650	2,090,566	13,710,316
1928	12,214,398	2,645,601	165,667	2,011,407	2,346,020	13,963,500
1929	12,214,398	2,398,899	253,659	3,393,863	2,800,842	13,963,500
1930	10,826,085	2,382,457	234,380	2,568,777	2,184,334	9,146,415
1931	8,074,304	2,428,682	276,802	1,456,122	1,890,339	9,143,074
1932	8,398,297	3,122,444	244,834	1,165,868	1,991,043	10,570,255
1933	10,123,029	2,662,503	385,639	2,731,458	2,657,171	13,115,461
1934	13,676,703	2,610,393	487,009	3,169,850	2,648,436	14,054,926
1935	20,019,129	2,835,750	595,030	7,129,750	5,376,497	15,329,198
1936	22,722,629	4,093,982	383,134	7,304,904	5,658,785	18,986,848

Year	(In yen)					Total Oil
	Linseed Oil	Perilla Oil	Paulownia Oil	Camellia Oil	Other Oils	
1927	1,584,332	896,291	208,465	1,013,593	3,040,848	39,926,965
1928	2,733,100	1,107,100	261,197	814,459	2,974,879	41,092,703
1929	2,945,224	1,442,661	218,218	728,262	3,600,224	44,347,827
1930	1,077,673	2,422,152	207,218	599,905	2,359,477	34,102,506
1931	1,094,542	2,052,760	154,928	428,788	2,134,248	29,211,569
1932	1,015,617	2,358,302	152,654	336,860	2,434,947	31,944,837
1933	3,775,357	5,518,011	184,427	378,188	2,487,087	44,018,331
1934	3,903,933	4,998,884	250,286	402,232	3,402,745	49,605,407
1935	3,691,897	10,494,970	227,418	439,392	6,743,334	72,882,365
1936	3,874,551	17,929,318	344,452	470,853	9,432,094	91,201,550

PRODUCTION OF ANIMAL OILS AND TALLOW

Year	(In yen)				
	Cod Oil	Herring Oil	Sardine Oil	Whale Oil	Other fish Oils
1927	315,458	—	5,170,870	—	—
1928	242,209	—	6,067,595	—	—
1929	225,088	304,042	3,527,435	704,925	957,117
1930	285,862	137,295	3,491,551	517,520	473,179
1931	278,245	26,686	422,439	168,921	321,170
1932	95,774	59,296	802,350	614,915	1,147,833
1933	296,362	35,854	456,752	498,194	2,018,732
1934	300,741	23,547	602,816	672,638	980,416
1935	1,158,270	19,770	829,438	989,018	5,257,035
1936	2,366,108	16,506	6,056,412	1,617,192	4,669,603

Year	(In yen)				Total
	Puna Oil	Beef Tallow	Pork Tallow	Others Animal Tallow	
1927	—	2,050,180	—	—	7,536,402
1928	—	4,133,321	—	—	10,443,125
1929	136,939	1,624,843	144,662	197,814	8,833,065
1930	97,039	996,866	169,454	292,485	6,461,251
1931	67,000	712,033	160,981	196,883	2,354,356
1932	75,714	666,015	143,921	52,698	3,653,516
1933	90,439	859,306	312,733	508,665	5,077,037
1934	110,803	630,051	287,470	791,678	4,400,160
1935	200,569	2,696,112	378,103	889,938	12,418,273
1936	262,013	943,558	450,064	387,030	16,768,476

PRODUCTION OF VEGETABLE WAX, CANDLES, AND MANUFACTURES OF OILS

Year	(In yen)							Total
	Vegetable Wax	Candles	Boiled Oil	Hardened Oil	Hardened Wax	Oleine	Stearine	
1927	2,877,735	5,334,372	3,351,349	6,676,627	—	—	—	10,027,976
1928	2,810,225	5,898,136	3,117,243	11,697,488	—	—	—	14,834,735
1929	1,497,875	5,175,200	3,319,275	12,124,719	1,061,950	880,688	219,425	17,559,428
1930	1,808,580	4,785,545	2,859,546	10,109,944	323,545	502,389	200,592	13,884,576
1931	1,293,719	4,471,845	2,756,897	7,175,041	517,986	419,309	213,321	10,949,181
1932	1,249,913	4,952,548	2,924,753	10,039,127	623,182	437,644	4,246,838	15,713,722
1933	1,440,017	5,410,628	3,339,737	13,594,028	513,571	552,401	2,561,846	20,561,585
1934	1,705,148	5,095,485	3,373,463	13,223,601	404,608	693,608	3,895,385	21,590,665
1935	2,228,715	5,201,888	5,837,861	19,173,264	254,064	563,137	5,480,962	31,309,288
1936	2,463,958	7,057,847	7,172,709	21,849,043	440,692	605,173	5,028,891	35,096,508

IMPORTS OF VEGETABLE AND ANIMAL OILS, TALLOW AND MANUFACTURES THEREOF

Year	(In yen)			
	Olive Oil	Beef Tallow	Stearine	Oleine
1927	161,000	5,025,000	192,000	222,000
1928	125,000	5,407,000	271,000	109,000
1929	245,000	5,019,000	337,000	215,000
1930	123,000	3,894,000	242,000	112,000
1931	182,000	2,481,000	189,000	100,000
1932	327,622	2,453,516	171,751	73,998
1933	357,324	3,411,534	112,541	51,395
1934	563,411	3,380,160	161,671	32,957
1935	908,625	2,340,363	126,286	11,802
1936	706,000	1,644,000	107,000	—
1937	602,000	1,949,000	140,000	—

EXPORTS OF VEGETABLE AND ANIMAL OILS, WAX, AND MANUFACTURES THEREOF

Year	(In yen)						
	Perilla Oil	Bean Oil	Rapessed Oil	Fish Oil	Whale Oil	Vegetable Wax	Hardened Oil
1928	—	1,625,000	2,105,000	7,941,000	220,000	2,088,000	2,017,000
1929	—	2,236,000	4,316,000	7,722,000	43,000	2,255,000	2,006,000
1930	—	4,359,000	4,672,000	7,600,000	361,000	1,870,000	3,987,000
1931	803,000	1,049,000	1,963,000	1,797,000	146,000	1,154,000	2,997,000
1932	1,100,000	1,010,000	1,308,000	2,768,000	466,000	1,177,101	4,221,000
1933	3,532,000	342,000	2,245,000	2,397,000	131,000	1,139,000	4,939,000
1934	3,709,000	623,000	5,024,000	3,150,000	155,000	1,258,000	5,042,000
1935	10,052,610	1,420,350	11,212,126	6,264,542	628,609	1,444,585	8,920,875
1936	14,981,000	931,000	10,547,000	9,306,000	874,000	—	10,002,000
1937	5,683,000	1,918,000	3,409,000	14,546,000	751,000	—	10,195,000

Rubber Industry

The rubber industry in Japan began with the establishment in 1886 of the Mitatsuchi Rubber Company, a limited-partnership concern, in Tokyo. The industry developed steadily through the Sino-Japanese and the Russo-Japanese Wars of 1894-1895, and 1904-1905. In 1909 there were 20 mills, 900 workers

and production reached ¥4,000,000 in value. During the World War the industry further developed. The earthquake of 1923 destroyed about 80% of the rubber manufacturing capacity of Tokyo and Yokohama districts, and many people were gravely doubtful as to whether the rubber factories in those

districts would ever revive, but reconstruction quickly took place and the factories rebuilt. In 1936 the total production in the country by mills employing more than 5 persons was as large as ¥135,238,000 in value, but the figure would be much larger if goods produced by people working in their own homes were included.

Rubber Industry in 1937

According to the report of the South Sea Gum Planters' Association the world production of rubber in 1937 amounted to 1,133,070 tons and Japan consumed 60,000 tons, standing the sixth among rubber consuming countries. The imports of rubber in the same year reached 1,062,600 piculs valued at ¥99,217,000 a decrease of 2,200 piculs and an increase of ¥26,340,000 as compared with the previous year.

The total number of factories and small shops for rubber manufactures in Japan is said to reach 9,900. At the end of 1936 the number of factories which employ more than 5 operatives was 787 of which but 2 employed more than 500 operatives. The control of rubber imports by the Government seriously affected the smaller shops and factories which ran short of the material during the first part of the year but the regulations were softened toward the end of the year, which relieved the situation somewhat. Figures for the production of rubber manufactures for 1937 are not yet avail-

able, but their exports amounted to ¥30,600,000, showing an increase of ¥1,000,000 over the previous year.

Reclaimed Rubber With the advance of economic control in Japan the reclamation of rubber from the discarded and waste rubber products began to be encouraged by the Ministry of Commerce and Industry.

At present the reclaimed rubber produced and used in Japan amounts to 8,000 tons or 13 percent of the total amount of rubber which amounts to 60,000 tons annually. If the amount is increased to 18,000 tons or 30 percent the imports of rubber may be reduced by ¥10,000,000, after deducting the money paid for the waste tyres imported from America and Canada. To attain the purpose the rubber committee of the Federation of Economic Bodies met on December 8, 1937, and recommended the improvement of the method of reclamation by an alkali process instead of the former oil process, the standardization of the reclaimed rubber and the rates of mixing it with raw rubber according to grades. By the mixture of the best reclaimed rubber with raw rubber improvements may be effected in the manufacture of tyres and special rubber articles in addition to lowering the cost. The hardships experienced in obtaining sufficient supply of raw rubber in 1937 may become a spur for the progress of this new field of chemical industry in Japan.

BUSINESS RESULTS OF RUBBER COMPANIES

	Second Half of 1936		First Half of 1937		Second Half of 1937	
	Percent- age of Profit	Percent- age of Dividend	Percent- age of Profit	Percent- age of Dividend	Percent- age of Profit	Percent- age of Dividend
Tropical Industrial Company	4.9	3.0	10.9	5.0	5.2	5.0
Borneo Rubber Company	9.0	5.0	15.7	8.0	12.0	8.0
Malay Rubber Company	12.1	5.0	25.5	10.0	19.0	10.0
Nankoku Company	—	—	30.6	7.0	13.6	7.0
Showa Rubber Company	—	—	—	—	24.5	15.0
South Sea Rubber Company	16.6	8.0	33.3	12.0	24.5	12.0
Sumatra Development Company	27.2	13.0	23.1	13.0	22.2	12.0
Nippon Rubber Company	31.2	20.0	35.0	20.0	22.4	15.0

PRODUCTION OF RUBBER MANUFACTURES IN JAPAN

Year	Soft Rubber Manufactures (In ¥1,000)				
	Shoes and Other Footwear		Toys	Tyres and Accessories	For Machinery
	No. Pairs units	Value			
1927	17,171	18,153	3,064	—	—

Year	Shoes and Other Footwear		Toys	Tyres and Accessories	For Machinery
	No. Pairs units	Value			
1928	26,143	21,306	2,517	—	—
1929	37,913	24,934	2,318	25,753	2,126
1930	47,290	20,379	2,313	19,285	1,420
1931	32,266	15,929	3,320	19,454	636
1932	34,294	17,352	5,027	24,080	1,173
1933	40,867	21,827	5,562	31,826	1,000
1934	44,305	25,102	3,547	40,588	491
1935	54,802	28,973	4,619	45,907	1,132
1936	44,390	31,790	4,984	51,066	859

Soft Rubber Manufactures (In ¥1,000)

Year	Belts	Rubber Pipes	Others	Total	Hard Rubber Manufactures	Grand Total
1928				69,075	1,195	70,270
1929	4,698	1,318	9,859	74,871	1,727	76,598
1930	4,576	1,972	9,551	59,563	1,203	60,766
1931	4,005	1,747	9,898	54,992	1,112	56,104
1932	4,438	2,191	10,563	64,827	1,054	65,882
1933	5,662	2,989	16,061	84,981	1,722	86,704
1934	7,165	3,448	20,159	100,503	2,715	103,218
1935	8,262	4,422	23,113	116,406	2,620	119,026
1936	8,749	5,230	29,047	131,729	3,558	135,288

Imports and Exports

The importation of rubber manufactures is decreasing each year. Tyres for automobiles, hose, belting for machinery, old rubber, etc., are the principal imports, but hose and belting of domestic manufacture are rapidly replacing the imported articles. On the other hand, the exportation of rubber manufactures is developing rapidly, especially in the case of rubber shoes.

Cultivation of Gum Trees

Plantation work by the Japanese was started as early as 1906 in the Malay States, and was later extended to Sumatra, North Borneo and other places. Soon afterwards a great interest was taken in the industry, Japanese investments quickly grew, and the work that was originally started as a private enterprise is now mostly carried on by joint stock companies.

IMPORTS OF RAW RUBBER AND EXPORTS OF PRINCIPAL RUBBER MANUFACTURES

(In yen)

Year	Imports of Raw Rubber	Exports of Principal Rubber Manufactures			
		Boots and shoes	Tires for Rikishā, Bicycles and Other Vehicles	Toys	Others
1933	29,685,000	8,213,000	8,839,000	8,633,000	—
1934	57,337,000	3,332,000	9,994,000	6,406,000	5,216,000
1935	51,636,065	2,699,337	9,945,667	4,195,171	6,568,000
1936	72,957,000	1,832,000	9,939,000	4,641,000	7,424,000
1937	99,217,000	2,886,000	12,983,000	4,279,000	10,452,000

Celluloid

General
The Japanese celluloid industry made considerable development during the World War. Owing to a heavy demand coming from European countries, where

factories were closed by the War, Japanese celluloid products once dominated the world's markets, but with the termination of the War, foreign products quickly regained their position in the markets captured by Japan during the War, and for some years the industry was in a state of depression. Gradually penetration was effected by traders and exporters, and overseas markets were largely restored, especially after the replacement of the gold embargo in December, 1931. The domestic market has been prosperous for many years, without being affected very much by changes in economic conditions.

Japanese celluloid products are mainly exported to America, England, South America and Australia. They are now exported to Europe and Africa, in competition with German products, their most formidable rivals. As long as the exchange rate is low and tariff walls are not raised, the export trade is destined to be prosperous.

Celluloid manufacturing is one of the most promising industries in Japan, with total production amounting to ¥33,396,000 in 1936 and exports reaching ¥24,576,000 in 1937, but it is faced with one great difficulty, that of obtaining its chief material cheaply. Camphor is the material, but as this is restricted

by monopoly law its price is kept fairly high.

The Dai Nippon Celluloid Kaisha is the largest manufacturer, with a subscribed capital of ¥20,000,000. 75 per cent of the total production in Japan comes from this company, while the remaining 25 per cent is divided among about ten small manufacturing concerns. The company, which has a virtual monopoly of celluloid manufacturing in this country, concentrates its energies on exporting. Nearly 80 per cent of Japan's total exports of celluloid are the produce of this company.

Cellophane is manufactured at the Kanzaki factory of the company, and is now procurable at very low prices.

The company is also the largest shareholder of the Fuji Photo-Film Company established in 1934 with a capital of ¥10,000,000. This company has a capacity of producing 150 million feet, and nearly monopolizes the manufacture of films in Japan, which amounted to ¥4,666,000 in 1936; the other film producing company being the Oriental Photo Industrial Company capitalized with ¥4,300,000.

Statistics Production of raw celluloid, celluloid manufactures, and exports of the same follow:

PRODUCTION OF CELLULOID AND MANUFACTURES THEREOF

Year	Raw Celluloid		Manufactures of Celluloid				Grand Total
	Quantity metric tons	Value	Toys (In ¥1,000)	Combs	Others	Total	
1927	3,414	9,372	1,539		3,125	4,665	14,037
1928	3,869	10,992	1,724		3,825	5,550	16,542
1929	5,806	12,278	2,025	535	4,668	7,229	19,508
1930	4,146	8,029	1,757	364	2,193	4,315	12,345
1931	4,847	7,800	861	393	1,347	2,602	10,403
1932	5,700	7,974	1,040	1,056	2,145	4,242	12,217
1933	8,893	16,674	2,628	1,503	3,395	7,527	24,202
1934	10,393	20,277	1,636	1,090	4,640	7,367	27,644
1935	13,033	24,649	1,975	1,208	6,208	9,392	34,042
1936	13,813	24,439	1,989	1,169	5,796	8,956	33,396

EXPORTS OF RAW CELLULOID AND MANUFACTURES THEREOF

Year	Raw Celluloid		Celluloid Manufactures			Grand Total
	Quantity metric tons	Value	Toys (In ¥1,000)	Combs	Others	
1925	115	399	4,265	696	510	5,472
1926	48	168	4,545	602	795	5,944
1927	77	208	4,077	715	840	5,632
1928	98	249	4,229	785	1,015	6,030
1929	208	396	5,572	963	1,834	8,370
1930	161	298	4,423	631	1,267	6,322
1931	304	504	3,041	763	920	4,725
1932	511	875	2,527	1,467	1,494	5,490
1933	1,320	2,363	3,178	3,110	2,346	8,635

Year	Raw Celluloid		Toys	Celluloid Manufactures			Grand Total
	Quantity metric tons	Value		Combs (In ¥1,000)	Others	Total	
1934	1,804	3,303	3,708	4,260	3,223	11,191	14,494
1935	2,033	3,469	6,054	4,414	3,069	15,550	19,021
1936	2,242	3,717	6,338	3,857	4,271	16,280	19,997
1937	2,100	3,952	7,606	4,854	5,403	20,574	24,576

Note: Incongruity in the figures of celluloid manufactures in the production and exports tables is due to the fact that a large amount of celluloid manufacture is produced by mills where less than 5 persons are employed.

Matches

The Industry in the Past

A factory for making matches was first established in Japan, in Tokyo, in April, 1875, by a certain Mr. Makoto Shimizu, who had just returned from studying the subject in a French technical school and a match factory managed by the French Government. In the same year a factory was established in Osaka, and in 1877 another was established in Kobe. In 1878, three years after the first factory was established, matches to the value of ¥24,000 were exported, and in succession factories were established in Shizuoka, Aichi, Osaka and Hyogo prefectures. By 1889, not only had the importation of matches ceased, but large quantities, in face of strong foreign competition, were being exported to China. In 1887, Hyogo-ken Match Seizogyo Kumiai (Association of Manufacturers of Matches in Hyogo prefecture) was formed and in 1900 the Doyo Kumiai (Association of Traders in Matches) was organized. The industry experienced great prosperity during the Russo-Japanese War, exports were made not only to China but also to the South Sea Islands, Straits Settlements and India. But from about that time the match industry began to develop in China and by 1908 it had developed to the extent that the market in China was considerably curtailed for the Japanese product, then when India raised her tariff on matches, and the Dutch East Indies imposed a consumption tax on them, exports of matches to countries in the Orient were considerably reduced. Exports for some time became almost negligibly small but in 1923, they suddenly increased to ¥3,248,000 from about ¥938,000 in 1922. The development of the match industry during the World War was such as to make the industry a menace to the International Match Company. This company, therefore, commenced negotiations with and was successful in amalgamating the Nippon Match Manufac-

turing Co., Ltd., which was one of the Mitsui interests, and the Nippon Match Co. came under foreign management for three years, that is, until 1927, when the largest match manufacturer in Japan, the Toyo Match Co., Ltd., seeing the advantages which would accrue from co-operation with the International Match Company agreed to amalgamation. The Daido Match Co., Ltd. (The Great Consolidated Match Co., Ltd.) was organized with capital equally subscribed by Japan and Sweden, and the management was placed in Japanese hands, avoiding in this way competition in foreign markets.

Exports increased along with the development of the industry and as far back as 1913 Japan's match exports totalled some ¥12,000,000 after meeting the domestic demand. During the World War annual exports were between ¥30,000,000 and ¥40,000,000, forming one of the big ten export items of Japan.

Due to the rising importance of Soviet matches in international trade, Japan's shipments to the United States have fallen almost to the vanishing point. At one time Japanese matches were most active in this trade, outstripping Soviet and Swedish matches in American sales. In the spring of 1935, however, a match sales agreement was concluded in New York, covering the American market. Each group agreed to take an annual quota of 33,000 tons.

In spite of the agreement, the situation has developed adversely for the Japanese and the trade is facing ruin. In anticipation of the conclusion of the agreement, the Soviet Union shipped vast quantities of its matches to America and since then has been underselling all competitors.

Japanese efforts to combat this tendency have been fruitless. The Goto Match Importing Company which the Japanese exporters established in New York to handle that end of the business has not been able to check the Soviet

advance, for it has been trying to get large profits on each unit, rather than meeting the Soviet price. Shipments have fallen away to nothing and the exporters here are likely to repudiate the agreement and ship directly in the future unless something is done.

When the Japanese match industry was influenced by Swedish interests the export field was limited to China and part of the South Seas, America, Australia, the Near East, Africa and Europe was monopolized by Swedish interests. After Kreuger's downfall Japanese match exporters took back their old markets. With the replacement of the gold embargo Japanese products have found their way in heavy volume to their old markets. The low exchange

rate and cheap labour in Japan have stimulated exports.

Exports in 1936 and 1937 follow:

EXPORTS OF MATCHES

Destinations	(Value in yen)	
	1936	1937
Hong-Kong	701,000	574,000
Straits Settlements	450,000	308,000
Kwantung L. T.	189,000	423,000
Other	825,000	798,000
Total	2,174,000	2,103,000

Number of Factories The number of match factories in Japan was 144 with 9,325 operatives at the end of 1936.

Production of matches and allied articles in recent years has been as follows:

PRODUCTION OF MATCHES, ETC.

Year	Quantity Produced Gross	Value (In yen)	Match-boxes	Matchwood
1927	3,301,575	14,540,033	1,217,350	2,202,373
1928	19,471,637	12,445,793	741,202	1,383,646
1929	21,607,683	9,825,495	1,358,616	1,220,148
1930	16,722,653	7,464,081	845,765	600,047
1931	13,535,353	6,686,245	457,067	701,334
1932	18,234,683	7,306,721	764,905	613,939
1933	20,711,259	9,202,221	1,169,029	710,525
1934	20,897,615	10,033,567	550,947	616,915
1935	27,369,618	12,659,929	607,979	742,767
1936	21,874,973	11,824,397	831,624	1,572,439

Dyestuffs

Through Governmental protection extending over many years, the Japanese dyestuff industry is now well established. Japan supplies 99 per cent of all sulphuric dyes demanded domestically. Concerning ratios of high-grade dye supplies, Japan can supply 86 per cent of miscellaneous dyes, 49 per cent of acid dyes, 35 per cent of mordant dyes and 26 per cent of cat dyes for internal use. Coal-tar dyes were already exported in 1934 to the volume of 7,023 metric tons, worth ¥4,259,000. Naphthol and Indanthrene dyes, of which consumption is approximately 150,000 kin worth about ¥3,000,000, are not manufactured here, but are imported from Germany. Research in producing these dyes is under way by the Mitsui Mining and Japan Dyestuff Manufacturing Companies. The Tekoku Senryo (Imperial Dyestuffs Manufacturing) Company is another producer of dyestuffs capitalized with ¥2,500,000 (paid-up).

On account of the restrictions put on the manufacture of certain of the high-grade dyestuffs by German patents,

Japan still finds it necessary to import dyestuffs to the value of more than ¥10,000,000 annually. On account of the development of iron manufacturing industry, however, Japan is now well provided with coal-tar, material required for the production of dyestuffs. Accordingly, efforts are now being made to promote the dyestuff industry with a view to making the country self-sufficient and self-supplied in dyestuffs.

Imports of dyestuff in 1937 were ¥15,928,000 in value, and showed an increase of ¥5,524,000 over 1936, details of which follow:

IMPORTS OF DYESTUFF

Colours	1935	1936	1937
	(In ¥1,000)		
Basic	828	796	1,246
Direct	2,252	3,013	4,708
Acid	1,939	1,776	2,537
Mordant and intermediate	1,723	2,006	2,651
Vat	1,855	2,458	4,078
Others	729	2,355	1,707
Total	9,338	11,404	16,928

The domestic production of dyes during 1936 compared with the preceding four years and exports of Japan-made dyes since 1932, follow:

PRODUCTION OF SYNTHETIC DYESTUFFS

Year	Basic		Direct		Acid		Mordant	
	Quantity 1,000kg.	Value ¥1,000	Quantity 1,000kg.	Value ¥1,000	Quantity 1,000kg.	Value ¥1,000	Quantity 1,000kg.	Value ¥1,000
1932	608	2,415	1,243	3,589	425	1,518	91	263
1933	717	4,069	1,693	5,707	522	2,249	32	220
1934	765	4,266	2,183	6,816	554	2,091	178	750
1935	677	3,774	2,700	7,726	756	2,781	341	1,409
1936	994	4,569	2,998	8,808	977	3,984	264	1,206

Vat Colours

Year	Sulphide		Artificial Indigo		Others		Others and Total
	Quantity 1,000kg.	Value ¥1,000	Quantity 1,000kg.	Value ¥1,000	Quantity 1,000kg.	Value ¥1,000	
1932	10,609	4,602	193	771	45	259	15,369
1933	11,816	5,721	594	2,327	65	445	23,983
1934	12,144	5,107	1,724	3,803	28	400	27,446
1935	12,450	4,673	2,816	5,760	26	627	31,265
1936	11,198	3,604	1,740	4,794	29	506	33,721

PRODUCTION OF ANILINE AND INTERMEDIATES

Year	Aniline		Others and Total
	Quantity 1,000kg.	Value (In ¥1,000)	
1932	2,440	1,591	6,803
1933	2,995	2,600	10,057
1934	3,821	3,033	8,492
1935	4,043	2,924	12,077
1936	3,943	2,328	13,115

EXPORTS OF DOMESTIC DYESTUFFS

Year	Quantity (Metric tons)	Value (¥1,000)
1933	6,125	2,895
1934	6,423	4,259
1935	8,882	7,304
1936	7,000	5,990
1937	6,062	6,269

Aluminium

The first aluminium manufacturing plant in Japan was erected at Omachi, Nagano prefecture, in December, 1933. The Japan Electric Industry Company, formerly known as the Japan Iodine Company, runs it. This concern also built the first alumina factory at Koyasu, Yokohama, in the spring of the same year. At the Koyasu factory Korean alum is used for making 20 metric tons of alumina a day. Alumina is sent to the Omachi factory, where 10 tons of aluminium is manufactured. This company has a yearly productive capacity of 10,000 metric tons against Japan's annual demand of 18,000 metric tons. The capitalization of this company is ¥50,000,000.

The Nichi-Man (Japan-Manchoukuo) Alumina Company was established in 1933, with a subscribed capital of ¥20,000,000. It has a yearly productive capacity of 5,000 metric tons. In 1935, the Nippon Alumina Company was

established with a subscribed capital of ¥30,000,000. It has a capacity of 6,000 metric tons, having factories in Formosa. The newest one is the Tohoku Shinko Alumina Company which was established at the end of 1937 with subscribed capital ¥10,000,000.

Alumina is also produced by some other chemical companies, among which is the Nippon Seiren Company which produces alumina from Japanese white clay.

Imports of aluminium into Japan during the past five years have been as follows:

Year	Amount in kilogrammes	Value in yen
1933	7,238,760	10,233,107
1934	10,175,820	12,581,368
1935	13,401,480	18,362,317
1936	10,241,000	13,229,000
1937 (to July)	5,294,000	7,163,000

DOMESTIC PRODUCTION OF
ALUMINIUM

(In metric tons)

Year	Amount
1934	664
1935	4,434
1936	6,664

Principal obstacles to the develop-

ment of this industry in Japan in earlier years were the lack of bauxite and the high cost of electric power which made the exploitation of the existing resources unprofitable commercially. However, the discovery of new bauxite deposits in more easily accessible places and the necessity for exploiting domestic resources have opened up new prospects for the industry.

Pyrethrum -

Hokkaido is noted for producing the pyrethrum flower, the raw material for anti-insect powder largely used for making mosquito incense and anti-bed bug powder. Pyrethrum was formerly exported through Kobe merchants, but owing to inconvenience the Hokkaido Government encouraged direct shipments from Hokkaido, the first direct shipment being made in September, 1933. The Hokkaido Government also caused pyrethrum manufacturers to organize the Manufactured Pyrethrum Industrial Guild, as the first step to the export of manufactured pyrethrum abroad, which had hitherto been exported in the shape of dried flowers. As an international commodity, manufactured pyrethrum is steadily gaining ground, and under the encouragement of their government, the Hokkaido pyrethrum raisers are manufacturing it for

direct export to the United States, Saigon, Bangkok, Rangoon, Manila, Singapore, Sourabaya, Batavia, Ceylon and Bombay, and to such European markets as London, Hamburg and Paris. Wakayama prefecture is also noted for raising pyrethrum flowers. Production and exports of pyrethrum during the last few years follow:

PRODUCTION AND EXPORTS
OF PYRETHRUM

Year	Production		Exports	
	Quantity 1,000kg.	Value ¥1,000	Quantity 1,000kg.	Value ¥1,000
1932	5,107	3,730	5,680	4,732
1933	6,061	7,809	5,088	6,349
1934	7,798	10,574	5,630	7,447
1935	12,746	7,322	7,065	6,400
1936	11,051	5,710	—	3,207
1937	—	—	—	7,003

Fuel Industry

The development of the extraordinary situation inevitably led to a serious consideration being given to the fuel problem confronting this country which had been producing only about 10 per cent of the petroleum it needed and could not afford to be optimistic even in regard to the supply of coal. After the enforcement of the quasi-wartime measures in 1936, following the outbreak of the February 26 incident involving the rising of certain army men, the fuel problem assumed an increasing importance in the industrial sections of the nation. So important did the problem become that the then Minister of Commerce and Industry, Dr. Ogawa, declared that the national policy on fuel formed the foundation of all the industrial activities of the nation. The year 1937 witnessed the first steps taken toward the solution of the important fuel problem.

Petroleum The domestic demand for petroleum in Japan amounted to more than 100,000,000 in 1936, the figure being twice that for 1930. As the increasing tendency of the demand failed to show any sign of possible abatement in the near future, the opinion was strongly voiced that the artificial petroleum industry should be established and the compulsory use of substitute fuels should be enforced. This led to the establishment of the Imperial Fuel Industrial Company capitalized at ¥100,000,000 the shares being divided equally between the Government and the private bodies.

The Imperial Fuel Industrial Company aims at the encouragement of enterprises required for the promotion of the production of artificial petroleum chiefly through investments in artificial petroleum manufacturing enterprises. According to a seven-year pro-

gramme, the company aims at an annual production of 1,000,000 kilo-litres each of volatile oil and heavy oil from both Japan and Manchoukuo.

The bill providing for the formation of the Imperial Fuel Industrial Company was introduced before the 70th session of the Imperial Diet, together with the Artificial Petroleum Industry Bill, the Volatile Oil Tax Bill, the Alcohol Monopoly Bill and the Alcohol-Volatile Oil Mixture Bill. The last named two bills and that part of the Volatile Oil Tax Bill which concerned the consumption tax were passed by the Diet session, and the others had to be presented again to the subsequent special session of the Diet for approval, and all the bills were finally passed.

From the business standpoint, the artificial petroleum enterprise did not prove successful on account of the competition with gasoline, and in order to cope with the situation, the Government adopted a policy of raising the market price of gasoline and also decided to grant a subsidy to make up the difference still existing between the market price of gasoline and that of artificial petroleum.

With reference to the compulsory storage of oil, Dr. Ogawa, the then Minister of Commerce and Industry, stated before the Diet session that the question concerning foreign oil companies had been settled, with the Mitsui Bussan Kaisha agreeing to satisfy the obligations on behalf of the foreign firms. The reduction of the sales quota for Chosen introduced by the authorities of the Ministry of Commerce and Industry, once again brought up the question because the foreign firms

were dissatisfied with the reduction. The result was the foreign firms again failed to fulfil their obligations during 1937, which caused the authorities concerned to be adversely criticized for not assuming a firmer attitude toward the foreign oil companies.

Coal The increased activities of industrial enterprises brought about by the munitions boom were further enhanced with the advent of the year 1937. This brought about a rapid increase in the demand for coal, which was estimated at 53,500,000 metric tons for the year 1937, or an increase of more than 4,000,000 metric tons over the figures for the preceding year. Under the circumstances, the Amalgamated Coal Association drastically changed its attitude, abandoning its policy of restricting shipments of coal and undertaking to encourage increased production.

In the encouragement of increased production of coal, two factors are contemplated. In the first place, the seven-year artificial petroleum production programme requires an estimated amount of 4,500,000 metric tons of coal in Japan proper and 4,500,000 metric tons of coal in the overseas territories and Manchoukuo for liquefying purposes in 1943 the final year of the seven-year programme. Secondly, the five-year iron and steel production increase programme requires an estimated amount of approximately 9,000,000 metric tons of coal for the manufacture of iron during 1941. In other words, the anticipated increase in the demand for coal during the period from 1941 to 1943, must take into consideration an estimated quantity of 18,000,000 metric tons, required for the above two projects.

CHAPTER XXIV COMMUNICATIONS

General

The communications of the country are supervised by the Minister of Communications and a special account is established for the management of this business, beginning with the fiscal year 1934-1935. General condition of the business in Japan proper in 1936-1937 may be obtained from the following:

Post, telegraph and telephone officials and operatives (Sept. 30, 1936)	240,937
Post, telegraph and telephone offices (Sept. 30, 1937)	14,122
Ordinary mail routes (Dec. 31, 1936) in km.	80,293
Ordinary mails accepted (1936-37)	5,002,600,455
Ordinary mails delivered (1936-37)	4,915,531,354

Parcel post routes (March 31, 1935) in km.	85,325
Parcel accepted (1936-37)	68,185,822
Parcels delivered (1936-37)	72,893,222
Telegraph routes (Dec. 31, 1936) in km.	50,303
Telegraph lines (Dec. 31, 1936) in km.	470,437
Telegraphs despatched (1936-37)	64,842,665
Telegraphs received (1936-37)	60,521,989
Telephone subscribers (Sept. 30, 1937)	956,350
Telephone routes (Dec. 31, 1936) in km.	85,462
Telephone lines (Dec. 31, 1936) in km.	7,077,757
Telephones (March 31, 1935)	935,139
Telephone messages (1934-35)	3,783,991,018
Income from postage and fees (1935-36)	¥ 288,489,480
Business expenditure (1935-36)	¥ 189,781,664

The Postal Service

Historical Survey

The present state postal service system was established in 1871, between Tokyo and Osaka. In August of that year, post offices were opened in Niigata, Hakodate, Kobe, Nagasaki, and Yokohama. In December a new postal route was established between Tokyo and Nagasaki, connecting the two cities in 7 days and 17 hours. In May, 1872, the postal service between Yokohama and Tokyo was greatly improved by the establishment of five deliveries a day, and by July the service was extended to all the cities and towns of importance throughout the country, except a part of Hokkaido.

Foreign Mail Opens In March, 1872, a foreign mail service was opened at the same time as the establishment of official postal regulations. In those days, foreign mail matter in Japan was handled with the aid of the British, American, and French post offices in Yokohama, Kobe and Nagasaki. Soon after the conclusion of the America-Japan Mail Service Treaty in 1873, the American post offices were withdrawn from this country, and Japan was thus placed

on an equal footing with the U.S.A. as regards the mail service between the two countries. In 1877, an arrangement was made with twenty-five countries participating in the International Mail Service Treaty. Thereupon, the British and the French post offices were also withdrawn from this country.

The post offices were at first classified into five grades, and in March 1886, they were classified into three as at present. In view of the development of telephone and telegraph business, the authorities introduced a revision in the system of the Communications Department in 1903, and divided post offices into post, telegraph, and telephone offices each of them being classified into 1st, 2nd and 3rd, or 1st and 2nd in the case of telephone offices. With the rapid increase in the amount of mail matter and telephone and telegraphic messages, the regulations of the Communications Department as to the number and kind of offices, were extended from time to time, and at present there are offices in warships, steamers, trains, etc., in addition to the network throughout the country.

The air mail service was commenced

in 1929 with the establishment of the Japan Air Transport Company in April of the same year.

The Growth The rapid growth of the postal service in the early years is illustrated by the following statistics:

Year	No. of P. O.
1871	180
1872	1,160
1873	1,501
1874	3,245
1882	5,527

Following the introduction of a revision in the postal service regulations in 1883, some of the offices were eliminated, the number being reduced to 4,088 by the end of 1889. But the steady development of postal business necessitated an increasing number of offices as the following figures for Japan proper show:

On March 31 of	No. of P. O.
1927	8,916
1928	9,114
1929	9,393
1930	9,690
1931	9,954
1932	10,208
1933	10,322
1934	10,611
1935	10,891
1937 (30, Sep.)	11,920

Post offices are classified into three grades, namely 1st, 2nd and 3rd, the 1st being, side by side with 2nd and 3rd offices, in such important places as Tokyo, Osaka, and other leading cities. The 2nd and 3rd are in smaller cities,

towns and villages throughout the country. Those of the 1st and 2nd grade are government offices, under direct government management. In post offices of the 3rd class, business is conducted on the contract system.

Its Business

In addition to ordinary matters relating to post and telegrams, the post offices in Japan receive taxes on behalf of the various tax authorities and pay pensions, annuities, etc. on behalf of the Treasury. Since 1906, New Year's greeting cards have been handled separately from ordinary mail matter with a view to relieving congestion. Such mail matter is accepted by all post offices from December 15 to 29 for delivery on New Year's day.

Ordinary mail matter is delivered 5 or 6 times daily in Tokyo, Osaka, and Kyoto, and 4 or 5 times in other large cities, where there are 1st class offices. In smaller cities, the 2nd class offices deliver 3 or 4 times a day. In towns and villages where they have 3rd class offices, mail matter is delivered twice a day only. The number of collections is the same as that of delivery in most cases.

The parcel post service was started in 1892, the first arrangement as regards foreign connections being made with Hongkong in 1879. The scope of international service was gradually extended, and covers almost all treaty countries at present.

Statistical Tables The following tables indicate the volume of business, handled by the post offices, and the increase in the amount of their work:

NUMBER OF POST OFFICES (September 30, 1937)

	Japan Proper	Taiwan	Karafuto	Chosen	Kwantung Leased Territory	South Sea Islands
1st Class	102	12	—	—	—	—
2nd Class	237	10	4	104	59	—
3rd Class	10,758	167	80	—	—	9
Minor offices	823	—	—	31	150	—
Total	11,920	189	84	135	209	9

VOLUME OF MAIL MATTER HANDLED IN JAPAN PROPER

	Ordinary Mail	Parcel Post	Total	Percentage of Increase
1907-1908	{ Despatched 1,357,447,195 Received 1,346,523,695	17,676,745 16,567,155	1,375,123,939 1,363,092,850	6.21 5.65
1912-1913	{ Despatched 1,630,394,998 Received 1,594,850,576	24,276,991 23,008,666	1,654,671,989 1,617,859,242	5.28 6.03

		Ordinary Mail	Parcel Post	Total	Percentage of Increase	
1921-1922	Despatched	3,992,769,865	48,758,863	4,041,528,718		2.03
	Received	3,989,309,281	45,890,304	4,035,199,585		1.87
1926-1927	Despatched	3,974,192,623	58,258,644	4,032,451,267		2.49
	Received	3,906,474,525	55,852,079	3,962,326,604		2.66
1929-1930	Despatched	5,096,611,368	63,650,583	5,160,261,951		9.55
	Received	5,046,099,425	60,654,644	5,106,754,069		(-9.70)
1930-1931	Despatched	4,409,551,651	60,067,753	4,469,619,404		(-0.02)
	Received	4,437,939,812	57,724,887	4,495,664,693		0.18
1931-1932	Despatched	4,409,202,875	58,201,931	4,584,404,806		1.08
	Received	4,532,477,443	55,654,599	4,588,132,042		(-1.35)
1932-1933	Despatched	4,253,259,031	58,472,313	4,312,231,344		(-0.36)
	Received	4,294,100,596	54,849,774	4,348,950,370		0.34
1933-1934	Despatched	4,357,325,600	61,240,342	4,418,565,942		0.25
	Received	4,402,200,835	57,762,972	4,459,963,807		0.26
1934-1935	Despatched	4,674,986,977	65,073,439	4,740,060,406		0.73
	Received	4,772,868,449	61,847,673	4,834,716,122		0.84
1935-1936	Despatched	4,735,348,007	68,291,938	4,803,639,947		0.13
	Received	4,901,685,581	64,854,932	4,966,540,513		0.27
1936-1937	Despatched	4,842,938,022	72,593,332	4,915,531,354		0.72
	Received	4,934,414,563	68,185,892	5,002,600,455		

VOLUME OF MAIL MATTER HANDLED DURING 1936-37 IN THE EMPIRE

	Japan Proper	Taiwan	Karafuto	Chosen	Kwantung Leased Territory	South Sea Mandated Islands
Ordinary mail						
Domestic mail						
Despatched	4,787,567,057	90,732,580	24,401,496	343,903,130	209,740,646	2,368,942
Collection post	6,658,071	248,219	13,169	454,718	11,679	16
Received	4,881,538,132	109,788,020	31,221,721	380,921,438	243,124,510	3,287,028
Collection post	—	378,466	64,427	684,866	114,046	726
Foreign mail			(Foreign mail included)			
Despatched	55,370,965	983,464		540,055	5,191,215	10,770
Collection post	—	—		—	—	—
Received	52,876,431	731,854		1,343,352	5,117,627	15,198
Parcel post						
Domestic						
Despatched	71,588,039	715,566	272,912	2,579,004	867,571	18,290
Received	67,973,142	1,263,573	625,382	3,917,426	1,982,946	65,233
Foreign			(Foreign mail included)			
Despatched	1,005,293	10,528		14,273	18,997	35
Received	212,750	3,755		5,916	26,260	134
Total						
Despatched	4,915,531,354	92,442,138	24,674,408	347,036,462	215,818,429	2,398,037
Collection post	6,658,071	248,219	13,169	454,718	11,679	16
Received	5,002,600,455	111,787,202	31,847,103	386,188,132	250,251,343	3,367,585
Collection post	—	378,466	64,427	684,866	114,046	726

Postal Money Order can hardly be included into the business of communications. It is, however, one of the important lines of business handled by

the post office for the convenience of the large mass of people. The number and amount of postal money orders handled during 1936-37 are given below:

POSTAL MONEY ORDERS IN 1936-37 DOMESTIC

Territory	Issued		Paid	
	No.	Amount (In yen)	No.	Amount (In yen)
Japan Proper	38,146,546	786,476,088	40,591,334	850,615,079
Taiwan	1,201,052	34,889,156	710,239	22,100,586
Karafuto	540,555	15,640,147	259,407	8,955,059
Chosen	4,376,072	143,368,955	3,771,199	126,124,203

Territory	Issued		Paid	
	No.	Amount (In yen)	No.	Amount (In yen)
Kwantung Leased Territory	1,720,510	47,902,427	630,898	19,380,766
South Sea Mandated Islands	99,042	8,247,489	25,971	7,865,850
FOREIGN				
Japan Proper	79,386	3,713,601	553,577	16,774,187
Taiwan	28,327	640,873	3,216	95,440
Karafuto	536	29,562	1,544	84,466
Chosen	42,351	2,129,525	127,064	3,570,776
Kwantung Leased Territory	35,203	1,493,190	142,596	4,043,196
South Sea Mandated Islands	82	6,721	141	9,363

The number of postal money orders issued in Japan proper has been on the constant increase since 1875 when the business was first opened while the

amount reached its highest mark in 1926 and continued decrease for five years until it began to regain the upward tendency in 1933.

POSTAL MONEY ORDERS IN JAPAN PROPER

Fiscal Year	Number	Increase	
		(In percentage)	(In percentage)
1911-12	Issued	16,623,165	2.08
	Paid	17,925,194	2.10
1915-16	Issued	20,014,404	2.04
	Paid	21,538,637	2.02
1920-21	Issued	27,298,164	3.64
	Paid	28,892,790	3.41
1925-26	Issued	30,400,558	1.14
	Paid	31,888,323	1.04
1929-30	Issued	31,233,521	0.27
	Paid	32,820,607	0.29
1931-32	Issued	31,877,079	0.21
	Paid	33,674,636	0.26
1932-33	Issued	33,360,209	0.47
	Paid	35,345,114	0.50
1934-35	Issued	35,371,607	0.60
	Paid	37,539,575	0.62
1935-36	Issued	36,926,278	0.44
	Paid	39,348,351	0.48
1936-37	Issued	38,146,546	0.33
	Paid	40,591,334	0.29

Telegraph Service

Telegraph service in Japan was started in August, 1869, but this was for Governmental messages exclusively. Public telegraph service was started in September of the same year between Tokyo and Yokohama. Telegrams in European languages were despatched for the first time in April, 1870. In August of the same year Osaka and Kobe began to exchange telegraph messages. In June, 1871 the laying of the submarine cable between Nagasaki and Shanghai was completed. In February, 1873,

aerial lines connected Tokyo and Nagasaki and telegraph service for districts along the lines was opened. In January, 1879, Japan entered the international telegraph association. With revisions of rules and laws in subsequent years the business was started on a fair and steady road of progress. Wireless telegraph service was installed in 1908, and telegraphic picture transmission was undertaken from August, 1930.

Statistics on the telegraph services follow:

TELEGRAPH STATIONS IN JAPAN PROPER

Year	Number	Increase in the Year	Year	Number	Increase in the Year
1929-1930	7,011	175	1933-1934	7,942	129
1930-1931	7,631	620	1934-1935	8,215	273
1931-1932	7,709	78	1935-1936	8,951	756
1932-1933	7,813	104	1936-1937	9,678	727

NUMBER OF TELEGRAPH OFFICES, SEPTEMBER 30, 1937

	Japan Proper	Taiwan	Karafuto	Chosen	China	Kwantung Leased Territory	South Sea Islands
1st class	5	—	—	—	3	31	—
Wireless	—	4	—	—	—	—	—
2nd class	42	—	2	9	—	—	—
Wireless { Land	17	3	2	—	—	—	—
{ S. S.	20	—	—	—	—	—	—
Post and telegraph offices	8,775	168	88	704	—	12	9
Minor offices	1,679	36	11	200	—	129	—
Wireless { Land	17	3	—	4	—	50	1
{ S. S.	13	6	—	—	—	—	—
{ Air	2	—	—	—	—	—	—
Total	10,570	220	103	917	3	222	10

TELEGRAMS HANDLED IN 1936-1937

	Domestic Messages		Foreign Messages
	Despatched	Delivered	
Japan Proper (Japan—Manchuria included)	64,842,865	68,521,989	1,475,353
Taiwan	1,848,350	1,936,787	25,914
Karafuto	906,525	888,862	192
Chosen	8,966,550	8,891,161	15,659
P. O. in China	50,296	41,691	125,263
Kwantung Leased Territory	4,127,533	3,840,929	19,731
South Sea Islands	288,582	242,589	136,198
			221,445
			217,239
			3,167
			1,965

NUMBER OF TELEGRAMS HANDLED BY INLAND POST AND TELEGRAPH OFFICES

(1930-1937)

				Increase or Decrease in %
	Domestic	Foreign	Total	
1930-31 { Despatch	57,382,506	1,183,861	58,566,367	de 1.31
{ Arrival	59,925,616	1,224,974	61,150,590	de 1.23
1931-32 { Despatch	55,507,280	1,193,654	56,700,934	de 0.52
{ Arrival	57,784,498	1,224,442	59,008,940	de 0.35
1932-33 { Despatch	54,065,046	1,254,430	55,319,476	de 0.24
{ Arrival	56,281,163	1,243,925	57,525,088	de 0.25
1933-34 { Despatch	56,529,921	1,237,193	57,767,114	in 0.44
{ Arrival	58,843,016	1,242,847	60,085,863	in 0.45
1934-35 { Despatch	59,173,906	1,262,539	60,436,445	in 0.46
{ Arrival	61,591,759	1,272,011	62,863,770	in 0.46
1935-36 { Despatch	62,433,347	1,321,910	63,755,257	in 0.55
{ Arrival	65,544,777	1,329,789	66,874,566	in 0.64
1936-37 { Despatch	64,842,865	1,475,353	66,318,218	in 0.40
{ Arrival	68,521,989	1,448,560	69,970,549	in 0.46

LENGTH OF INLAND TELEGRAPH LINES

March 31, 1937

	Km.	As compared with the previous year
Land lines		
Aerial lines, routes	34,022	- 553
" lines	224,991	-9,099
Overhead cables, Routes	132	+ 28
Cores	26,753	+3,132
Underground lines Routes	771	+ 26
Cores	98,988	-1,783
Submarine cables Lines	15,378	- 84
Cores	19,707	+1,164

PNEUMATIC TUBES

March 31, 1936

	Metre	As compared with the previous year
Length of routes	69,191	+ 13
Length of tubes	140,392	+ 10

FREQUENCIES AND HOURS OF FAULTS OF INLAND TELEGRAPH

1935-1936

Land and underground lines		
Contacts	{ Frequency	4,902
	{ Hour	25,005
Earth	{ Frequency	4,636
	{ Hour	31,238
Disconnection	{ Frequency	2,564
	{ Hour	9,773
Leakage	{ Frequency	349
	{ Hour	4,496
Others	{ Frequency	867
	{ Hour	1,737
Total	{ Frequency	13,358
	{ Hour	72,249
As compared with the previous year	{ Frequency	+ 1,042
	{ Hour	- 11,089
Submarine cables	{ Frequency	103
	{ Hour	143,361
As compared with the previous year	{ Frequency	+ 1
	{ Hour	- 640

TELEGRAPHIC APPARATUSES AND BATTERIES

March 31, 1936

Apparatuses	
Telephones for telegraph service	4,716
Ink writers	2
Sounders	5,916
Automatic telegraphs, duplex	172
Undulator and siphon recorders	16
Printing duplex telegraphs, Japanese	58

Printing automatic duplex telegraph, alphabet	7
Double-duplex printing telegraphs	8
Phototelegraphs	4
Telegraph repeaters	218
Automatic time switch	87
Others	92
Total	11,298
Batteries	
Primary	89,276
Secondary	8,795
Total	98,071

Wireless Telegraph Service

The study of wireless telegraphy was begun in Japan in 1896, or one year after the invention of wireless telegraphy by Marquis Marconi. In 1903, an experiment was made between Nagasaki and Taiwan by the Communications Department with satisfactory results.

The First Station In November, 1906, Japan sent her delegation to Berlin to represent her at the First World Conference on Wireless Telegraphy. In May, 1908, the first land wireless telegraph station was established in Choshi, (Chiba prefecture), whilst the first marine wireless telegraph equipment was set up on the Toyo Kisen liner "Tenyo Maru" in the same year. In July, 1908 wireless telegraph stations were established at Ohsézaki in Nagasaki prefecture, Shionomisaki in Wakayama prefecture and Tsunojima in Yamaguchi prefecture. In December, 1908, a wireless telegraph station was established at Oichishi in Hokkaido. At the same time sets were installed on some of our ocean liners. Japan was thus placed on a more or less secure foundation in the sphere of wireless telegraphy.

The circulation of regulations for private wireless telegraph offices in October, 1915, greatly facilitated the healthy growth of the business, and the service was extended to wider areas. It was utilized for steamship communication, and contact was also made with steamers and between ships and land stations, and also between aeroplanes and steamers or stations on land. With the enforcement of a law for the establishment of wireless sets on steamers, the number of stations rapidly increased.

International Communication The extension of wireless communication with other countries started in Japan in 1915, when messages were exchanged between Oichishi station and Petropavlovsk in

Kamchatka. In 1916, the Funabashi station succeeded in exchanging messages with Hawaii. In 1920, the Iwaki station was established for handling messages between Japan and America. In 1925, the Government issued a law establishing the Japan Wireless Telegraph Company with a capital of ¥20,000,000, with a view to becoming absolutely independent of foreign telegraph companies, with whose co-operation Japan had been exchanging wireless messages with all other countries, except America, Russia, and China.

The Government transferred to the Company its Iwaki radio plant and the ground at Yosami and Yokkaichi which it was holding with the intention of erecting radio stations for the services with countries in Europe.

The Company was reorganized in March, 1938 and assumed the name of the International Tele-Communications Company, increasing its capital to ¥25,000,000 and absorbing the International Telephone Company.

The Company has, according to the Law, to equip and manage the facilities and then rent them to the Ministry of Communications in consideration of a subsidy. Although many improvements were introduced at considerable outlay over all former installations of Iwaki radio plant by the Company, the advent of short-wave methods compelled it to close the stations upon the completion of its new stations at Oyama and Fukuoka.

The Company's circuits now offer from Nagoya direct communication service with England, France, Germany, Italy, Switzerland, Poland, Holland, Mexico and Brazil; and from Tokyo the circuits reach out to North and South America, Hawaii, the Philippines, French Indo-China, Siam, Dutch Indies, British India, and Syria. The Company has an extensive plan of development which will in future place Japan in direct touch with all the important countries of the world.

The Company now places the following stations in daily twenty-four hour service:

(a) Transmitting station at Oyama, near Tokyo.

Receiving station at Fukuoka, near Tokyo.

(b) Transmitting station at Yosami, near Nagoya.

Receiving station at Yokkaichi, near Nagoya.

Stations (a) are used for direct communication with San Francisco, Buenos Aires, Honolulu, Manila, Saigon, Bangkok, Bandoeng (Java), Bombay and

Beirut (Syria); and, stations (b) for direct communication with London, Paris, Berlin, Rome, Geneva and Warsaw.

Number of telegrams dealt with at wireless telegraph offices in the past five years was as follows:

Year		Domestic Foreign	
		Domestic	Foreign
1931-32	Despatched	386,989	53,929
	Received	290,559	24,097
1932-33	Despatched	387,368	50,403
	Received	262,587	22,444
1933-34	Despatched	426,705	53,999
	Received	283,616	26,110
1934-35	Despatched	537,373	63,856
	Received	327,041	30,647
1935-36	Despatched	552,718	41,112
	Received	314,338	25,418

Telephone Service

According to the latest statistics, the number of telephone exchange offices in Japan proper was 5,467 and that of subscribers 956,330 in September, 1937.

The following tables show the development and present scope of the telephone service:

NUMBER OF TELEPHONE EXCHANGE AND MESSAGE OFFICES

	Sept. 30, 1937	
	Exchange Offices	Other Offices
Japan proper	5,467	9,483
Taiwan	116	178
Karafuto	36	53
Chosen	226	795
Kwantung Leased Territory	50	115
South Sea Islands	2	—

NUMBER OF INLAND TELEPHONE SUBSCRIBERS

Year	Total subscribers	Applicants for subscriptions
1929-30	690,043	182,217
1930-31	715,020	176,900
1931-32	729,914	172,150
1932-33	761,136	167,276
1933-34	796,538	161,857
1934-35	830,041	154,345
1935-36	870,476	145,049
1937 (30, Sept.)	956,330	127,216

NUMBER OF TELEPHONE SUBSCRIBERS IN THE TERRITORIES

Territories	Subscription
Taiwan	18,863
Karafuto	5,997
Chosen	45,450
Kwantung Leased Territory	41,414
South Sea Islands	422

NUMBER OF TELEPHONE MESSAGES IN JAPAN PROPER

Year	In the Same Subscription Districts			With Other Districts	
	Messages between Subscribers	Hours of Conversations at Offices and Public Tele-phones	Requests for Calling out	Hours of Conversation	Requests for Calling out
1931-32	3,111,359,022	34,755,091	37,131	180,033,609	1,954,216
1932-33	3,208,443,375	35,444,101	38,537	190,635,368	1,929,063
1933-34	3,564,536,772	36,949,570	43,165	211,604,540	2,003,246
1934-35	3,783,991,018	40,202,841	42,124	236,789,514	2,110,144
1935-36	3,984,266,968	44,791,390	44,494	273,789,863	2,216,320

FREQUENCIES OF FAULTS WITH URBAN TELEPHONES IN JAPAN PROPER, 1935-1936

Faults in exchange offices		As Compared with the Previous Year
" subscribers	516,328	+ 4,164
" on routes	629,486	+50,770
Total	1,493,738	+34,338
		+89,272

LENGTH OF TELEPHONE LINES IN THE EMPIRE 1935-1936

	Japan Proper As Compared with the Previous Year		Taiwan	Kara-futo	Chosen	Kwan-tung Leased Territory	South Sea Islands
	Km.						
Land lines							
Aerial lines, routes	59,682	+814	3,395	290	9,471	2,122	27
" lines	596,647	+53	23,394	5,619	59,225	39,812	94
Overhead cables, routes	7,532	+1,510	157	31	17	314	3
" cores	1,952,710	+169,595	18,060	5,198	39,072	59,851	375
Underground lines							
Routes	3,939	+345	22	4	43	22	—
Cores	4,179,112	+234,607	35,417	3,353	55,662	44,941	—
Submarine cables							
Lines	1,087	+24	—	—	—	—	—
Cores	8,858	+365	—	—	—	—	—

Figures for Japan proper are of March 31, 1936, while those for others are of 1933-34.

NUMBER OF TELEPHONE APPARATUSES AND BATTERIES IN THE EMPIRE, 1935-1936

	Japan Proper As Compared with the Previous Year		Taiwan	Kara-futo	Chosen	Kwan-tung Leased Territory	South Sea Islands
Manual telephone exchanges	11,736	-59	254	1	—	198	1
Automatic telephone exchanges	3,326	+324	1	85	841	197	2
Telephones	987,726	+52,587	17,620	5,658	43,648	24,695	354
Batteries	912,521	+23,305	24,516	5,999	71,446	17,171	470

Note: Figures for colonies are of 1933-34.

Wireless Telephone Service

The first experiment with wireless telephony in Japan was made in 1911

by the Communications Department with very satisfactory results. It was in 1923, however, that the service was opened for public use between Kobé

city and steamers in the harbour. In 1926, this service was extended to Moji. The result being satisfactory, the Government decided further to extend the service and in December, 1932, the International Telephone Company, with a capital of ¥10,000,000, was established through the solicitation of the Communications Ministry to build up stations for the use of the Government and private bodies. This was done to facilitate wireless telephone service between Japan and the world, Japan's colonies and ships at sea. The transmitting station of the company is established at Nazaki, Ibaraki prefecture, and the receiving station at Komuro, Saitama prefecture, and these stations are connected each other and with the Tokyo Central Telephone Office by cables. Wireless telephones are now available between Tokyo, Nagoya, Kanazawa, Kobe, Osaka, Kyoto, Yokohama, Toyohashi, Nara, Himéji, Shimonoséki, Fuku, Fukuoka, Yawata,

Wakamatsu, Nishinomiya, Amagasaki and Suma. The service has been opened between Formosa and Tokyo, on June 20, 1934. (See p. 616.)

In 1934-35 international wireless telephone service was successively opened between Japan and Manchoukuo, U. S. A., Canada, Mexico, Cuba, Philippines, Dutch East Indies, Sumatra, England, and Germany. The service with other 28 European countries was opened in July, 1935, with China in February, 1936, with Cape Town and Brazil in April, 1936, with Saigon in May, 1936, and with Argentine, Uruguay, Paraguay, French-Indo-China, Siam, and Union of South Africa in 1937.

Rates for the first 3 minutes range from ¥40 to ¥110 for European countries and from ¥54 to ¥95 for the U.S.A., the highest being ¥164 for Paraguay in South America.

Telephotograph Service This service is only available between Tokyo, Osaka and Formosa.

Radio

Radio broadcasting in Japan is under the control of a single organization, the Broadcasting Corporation of Japan, which in turn is supervised by the Ministry of Communications. Programmes are subjected to strict censorship and nothing that might harm the interests of the country and its people is allowed to go on the air. Advertising of all sorts is prohibited. Political speeches cannot be included in the daily programmes. Even election campaign speeches and Diet proceedings cannot be broadcasted. (See Chapter XXXVII.)

The First Programme The first radio programme in Japan went on the air on March 22, 1925, five years after the world's first regular commercial broadcasting by the station KDKA, East Pittsburgh, Pennsylvania. The station, using the call letters JOAK, was in Tokyo, and it had a power of only 500 watts. This station, established temporarily at Shibaura, on the water front of Tokyo Harbour, was replaced in July by a 1 kw. station at Atagoyama, a hill in the southern part of Tokyo. In the difficult times following the great earthquake and fire of September, 1923, which laid waste a greater part of Tokyo, the radio played an important part in comforting and encouraging the citizens who were working hard to rebuild their city and their homes.

Shortly afterwards, small stations were established in Osaka and Nagoya, which form with Tokyo the three largest population centres. The engineers in charge of these stations were sceptical about their success. There was no assurance that the Japanese public would respond by buying radio sets and listening in, or would like the programmes once they were heard. These fears, however, were groundless. For a time there were not enough receiving sets in the stores to meet the demand. Instead of a novelty, the radio became a daily necessity. Elated at their success, the promoters worked out a plan to centralize all the broadcasting in the country, which was heartily approved by the Ministry of Communications. Before the end of a year, the stations in Tokyo, Osaka and Nagoya were merged, and the Broadcasting Corporation of Japan was formed to assure nationwide cooperation in meeting the demand for more efficient stations and better programmes.

International Programme Exchange Starting with the vivid scenes of New Year's Eve from U.S.A., the year of 1936 was the busiest year the Corporation ever experienced in the line of international broadcasting.

In the early spring, speeches on the London Naval Disarmament Conference by Japanese representatives and the relay of Funeral Service of the late King George V. from England impressed the hearts of whole nation. Besides the large number of programme exchanges with other countries, as one of the chief events previously planned, the Corporation succeeded in relaying eye-witness accounts of almost all events from the actual scene of the Olympic stadium and swimming pool on the occasion of the XIth Olympiad which was held in Berlin.

In order to describe the running commentary of the Olympic Games, the Corporation sent a corps of JOAK staff members to Berlin for the benefit of the domestic listeners.

The entire nation most enthusiastically listened to these broadcasts from Berlin, because of the two-fold events; one of which was Olympic Committee's deliberation in Berlin on the fortunate city for 1940 Olympiad, and the other was the outcome of the Berlin Olympiad itself, awaiting the success of the large number of Japanese competitors participating in the Games. The result of reception was so successful that the whole nation not only enjoyed these broadcasts but marvelled at the technical perfection in the modern art of radio transmission for long distance in which much credit is due to the skill and effort of the operators on both sides.

The international programme exchange yearly adding its importance as one of the most effective mediums to create a better understanding of each nation, the Corporation is increasing its effort in various phases of this field to co-operate with as many broadcasting organisations of the world as circumstances permit.

In the year 1937, Japan participated in twenty-nine international broadcasts.

Overseas Broadcast The Broadcasting Corporation of Japan inaugurated daily one hour short-wave broadcast, that is 2:00 to 3:00 p.m., Tokyo Time, under the name of "Overseas Broadcast" on June 1st, 1935 with the object of furnishing the residents in the foreign countries with accurate information about Japan and of introducing the culture of Japan.

The programmes of this broadcast consist of news in Japanese and English, music, entertainment, talk and eyewitness accounts of various sport events and

other subjects, specially selected to present a true and interesting glimpse of the real Japan to all listeners abroad.

Though this broadcast was mainly directed to the West Coast of North America and Hawaii, the programmes of this broadcast met with an enthusiastic response and reports of good reception and much encouraging response complimenting the contents of the programmes were received, not only from the areas to which they were specifically addressed but also from other parts of the world.

Moreover, the Corporation was carrying out during the past year experimental transmissions, one for the East Coast of North America and South America and the other for Europe, each twice a week. These transmissions also met with considerable response and a large number of reception reports from those who had listened to these broadcasts in various countries to which these transmissions were specifically directed.

Encouraged by the good results of these experimental transmissions, the Corporation has decided to inaugurate three more daily transmissions, and the first programme of these transmissions went on the air on January 1st, 1937.

Transmitters of 20 kilowatt are used temporarily for these broadcasts, but they will be replaced in the near future by 50 kilowatt transmitter which is now under construction.

From the beginning of April 1937, the broadcast to Europe, on Monday, Wednesday and Friday, will be in English and German and on Tuesday, Thursday and Saturday, French and English will be employed. On Sunday the broadcast will be only in English.

In the other three directions broadcasts will be in Japanese and English.

Programme Hours The working hours of each broadcasting station in Japan differ a little according to their local conditions as well as the seasons of the year. According to the statistics of the year 1935, the average broadcasting hours per day per station were nine hours and fifty-eight minutes.

The first programme of the day is sent out at 6.00 a.m. (from April to October) and at 6.30 a.m. (from November to March), and the closing announcements of the day's programme goes on the air at 9.50 p.m.

The following table gives programme statistics for the year 1936 (from Jan. 1 to Dec. 31) classified into nine groups.

PROGRAMME STATISTICS
(From Jan. 1 to Dec. 31, 1936)

Programme Classes	Number of broadcasts	Hours	Duration	Percent. (Programme hours)
		(in total)	(per broadcast)	
		m.	m.	
News	79,968	469,432	5.8	25.0
Talks, Courses	18,694	494,381	26.4	26.2
Children's Hour	5,704	81,134	14.2	4.2
School Broadcasting	5,041	81,930	16.2	4.2
International Broadcasting	492	13,943	28.4	0.7
Outside Broadcasting	2,639	222,314	84.4	11.5
Music	9,392	186,722	20.0	9.9
Entertainment	5,006	151,556	30.2	8.6
Miscellaneous	13,722	187,621	13.6	9.9
Total	140,658	1,888,033	13.3	100

Remarks: Figures show the total of seven central stations in Japan.

New Broadcasting Houses Development of our broadcasting is reflected in the establishment of two large broadcasting houses, one in Osaka and the other in Tokyo at a total cost of six million yen. The Broadcasting House in Osaka was opened to service in November 1936. This six storied building (exclusive of the central tower which is three storied) covers an area of 1927 sq. meters, and comprises 13 studios in all.

While in Tokyo, a site of 3950 sq. meters has been chosen near the Hibiya park for a six storied building which will house 18 studios and rooms for various department offices. The construction for the foundation has been already completed, and the steel structures are now being raised and it is expected that we shall see the central broadcasting house in full swing in the summer of 1938. In September, 1935, a research committee for the design of studios to be housed in these broadcasting houses was formed. This committee comprises electrical, acoustical and architectural specialists, and preliminary practical tests are being carried out at present at the JOAK building at Atagoyama.

Research Laboratory The technical research laboratory of the Corporation was established at Setagaya district in western part of the city of Tokyo in April 1930. The work of the laboratory is directed mainly to the fundamental and general researches as well as to the various possibilities of broadcast transmission and reception apparatus, wave propagation phenomena, visual broadcasting, patents and other problems related to the art of broadcasting.

Owing to the rapid development of the radio art, the laboratory was found to be too narrow to continue these researches, and the premises and building

were enlarged in 1936.

Television For some years past research work of television has been going on separately at the Waseda University, Hamamatsu Higher Technical College, Tokyo Electric Co., Electrotechnical Laboratory of the Department of Communications and the Research Laboratory of the Corporation. They had their own special system and the comparison of merits between them is a question very difficult to solve. A somewhat different line of investigation is now being undertaken, namely, whether it is possible to combine advantages of these systems and realize the experimental broadcasting of the television.

The Television Society of Japan, which was formed in 1934, and which comprises the investigators of television throughout the country is earnestly recommending to start the experimental broadcasting, and the Corporation is now considering the matter to comply with the recommendation. The desirability of its early realization is justified, though the policy of the Corporation towards the question is yet to be disclosed. The special building for the purpose of the television research is under construction at present on the premises of the Research Laboratory.

Wireless Exchange System Although the growing trend of listeners of broadcast has been of a steady and healthy nature, the listeners are mainly concentrated in the city districts and the percentage of listeners to population in the country districts remains far below that of the former. This difference is chiefly attributed to the financial difficulties of the country districts. To conquer this drawback the Corporation is planning to start the wireless exchange system, with special units suitable for the nature of its service.

Technical experiments to find out the most efficient method for this system are being carried out at present in different regions throughout the country. A representative is chosen in a village and a broadcast receiving set is installed there, the operations and care of the set being entrusted to the representative and the audio output distributed by specially constructed lines to the subscribers in the village. The results in various districts so far are proving to be successful, and as soon as the plan is authorized by the government it is expected to be actually put in service at an early date. It is expected that by applying this system the majority of the population in country districts who are individually not able to pay the cost of a receiving set, the expense for maintenance and the charge for power supply for the receiving set, will now be able to enjoy the benefit of the broadcasting.

This system appeals also to those who find wireless reception difficult or who wish to avoid the trouble of looking after a wireless set.

Listeners When the Tokyo broadcasting station was opened on the 22nd of March 1925, the total number of listeners for the whole country was something like 5,400. On the 20th of August 1926, when the Broadcasting Corporation of Japan was formed, the number of listeners had reached a figure of over 328,2000.

The listening fee of two yen a month

had been calculated to be charged at the time when the broadcasting services were started, was reduced to one Yen due to the unexpected increase in the number of listeners. This rate was uniform all over the country.

In September 1928, the number of listeners reached the 500,000 mark. In February 1932, three years and four months after, the number ran into 1,000,000, and in April of the same year, the subscription fee was reduced to seventy-five sen. The so-called "Golden Age" in our broadcasting begins at this period and in June 1933, the number passed the 1,500,000 mark, and keeping up the momentum, it leapt into 2,000,000 in April 1935. In commemoration of this growth, the subscription fee was reduced to the modest sum of 50 sen a month, which is being kept up to this day.

To sum up, it took about seven years for the number of registrations to reach the first 1,000,000; the next 1,000,000 was reached in three years only; while the subscription fee has been reduced to half the original sum during these 10 years,—a rate without parallel elsewhere in the world.

Thereafter, there was a tendency for the number of registrations to go on rapidly increasing, and on February 7, 1936, the number reached 3,503,166, the rate of distribution representing 49.0 per 1000 population or 25.8 per 100 families.

THE YEARLY INCREASE OF LISTENERS

Year	Number of new registrations	Number of discontinuances	Number of net increases	Average increase per month
1925	200,191	5,619	194,572	17,688
1926	218,830	64,431	154,399	12,867
1927	129,867	101,541	28,326	2,361
1928	283,043	120,297	162,746	13,562
1929	243,559	161,860	81,699	6,808
1930	283,714	170,921	112,793	9,399
1931	396,078	181,791	214,287	17,857
1932	546,859	175,416	371,321	30,943
1933	504,657	196,976	307,693	25,641
1934	501,695	232,003	269,562	22,464
1935	628,214	220,947	407,081	33,923
1936	710,936	239,244	471,710	39,309
1937	692,286	194,462	497,666	41,472
Total	5,530,384	2,127,895	3,402,489	—

PERCENTAGES OF THE NUMBER OF LICENCES TO 100 FAMILIES AS AT THE END OF DECEMBER, 1937.

Localities	No. of Licences	Per 100 Families	Localities	No. of Licences	Per 100 Families
1. Tokyo	834,646	65.7	3. Hyogo	203,775	33.4
2. Osaka	414,775	46.2	4. Aichi	200,836	35.2

Localities	No. of Licences	Per 100 Families	Localities	No. of Licences	Per 100 Families
5. Kanagawa	143,766	40.1	28. Fukushima	27,683	10.2
6. Kyoto	131,644	37.2	29. Ehime	27,076	11.1
7. Fukuoka	127,491	23.9	30. Ishikawa	26,816	17.0
8. Shizuoka	93,915	27.0	31. Kagawa	26,315	17.3
9. Hokkaido	90,674	16.6	32. Kagoshima	25,062	7.5
10. Hiroshima	71,648	18.7	33. Fukui	23,835	17.9
11. Chiba	59,534	20.3	34. Shiga	21,477	14.2
12. Niigata	56,835	16.0	35. Oita	21,143	10.8
13. Saitama	53,630	19.3	36. Yamagata	20,943	11.3
14. Okayama	50,107	17.9	37. Shimane	19,781	12.5
15. Kumamoto	47,631	18.2	38. Tokushima	19,152	13.1
16. Yamaguchi	46,267	17.9	39. Kochi	17,424	11.1
17. Gifu	44,376	18.1	40. Akita	17,318	9.9
18. Gumma	42,073	18.7	41. Saga	15,663	12.3
19. Nagano	40,128	12.1	42. Miyazaki	14,151	8.9
20. Miyagi	38,655	19.3	43. Aomori	13,578	6.4
21. Miye	36,769	15.3	44. Iwate	13,248	7.6
22. Tochigi	35,336	16.6	45. Tottori	13,063	13.7
23. Nagasaki	32,550	12.9	46. Yamanashi	12,811	10.3
24. Ibaraki	31,575	11.0	47. Karafuto	5,829	8.9
25. Toyama	30,698	19.8	48. Okinawa	769	0.6
26. Nara	30,470	24.6	49. South Seas	85	-
27. Wakayama	29,463	16.0	50. Total	3,402,489	23.1

MONTHLY INCREASES DURING THE YEAR 1937

Month	Number of new registrations	Number of discontinuances	Number of net increases	Number of net increase in the corresponding month of previous year
Jan.	67,041	17,212	49,873	42,350
Feb.	61,579	17,840	43,744	39,199
Mar.	62,815	28,097	35,017	37,083
Apr.	73,381	11,169	61,753	52,302
May	89,928	20,502	69,633	37,471
June	61,310	29,610	31,693	41,043
July	65,909	22,467	43,544	40,459
Aug.	84,775	18,875	65,773	50,402
Sept.	94,293	22,559	71,685	38,565
Oct.	73,555	25,338	48,230	28,516
Nov.	74,782	23,647	51,228	32,501
Dec.	74,354	20,119	54,127	32,819
Total	883,721	257,335	626,300	471,710

This number of registrations, when divided between cities and towns, the number in the former occupying 66.4% of the whole total, while in the case of the number of families, just the reverse is noted i.e. large percentage of 65.4 is claimed by towns, hence it is that the rate of diffusion, with the for-

mer comes out to be 46.8 per 100 families and with the latter 13.1%, constituting a marked difference between the rates of the two. The accompanying list gives the comparison of the rates of diffusion of licence holders in cities and those in towns during the past six years.

Year	Total		Cities		Towns & Villages	
	Number of licence holders	%	Number of licence holders	%	Number of licence holders	%
1932	1,320,143	100	965,740	73.2	354,403	26.8
1933	1,627,836	100	1,166,777	71.7	461,059	28.3
1934	1,897,398	100	1,364,573	71.9	532,825	28.1
1935	2,304,479	100	1,628,059	70.6	676,420	29.4
1936	2,776,189	100	1,915,857	69.0	860,332	31.0
1937	3,402,489	100	2,259,513	66.4	1,142,976	33.5

The new registrations in the course of 1937 passed the 880,000 mark, creating a new record since the inauguration of broadcasting activities.

When the net increase of registrations of over 626,000 is divided between cities and towns, the former occupies 49.5% of the total. Recently there is a marked tendency of the rate being on the increase with towns, and the reverse is the case with cities.

When the number of new registrations and that of discontinuances, during 1937 are classified respectively according to the professions, and set against the corresponding percentages for the previous year, as is done in the following list, we find that the increase in the percentage was recorded in agriculture, manufacturing industry, marine products industry.

Professions	New registration		Discontinuances		Population with profession
	1937	1936	1937	1936	1930
Agriculture	16.3	12.2	12.7	9.9	47.7
Marine products industry	0.5	0.4	0.5	0.3	1.9
Mining industry	0.7	0.5	0.6	0.4	0.9
Manufacturing industry	8.7	8.5	8.4	7.7	19.3
Commerce	35.7	37.6	32.4	37.4	15.1
Transportation industry	1.9	2.3	2.4	2.3	3.7
Civil, military services & professions of liberal professions	8.5	30.0	32.2	30.9	6.9
Households works	0.1	0.2	0.2	0.2	1.9
Other industries	0.2	0.1	0.3	0.1	2.6
No industry	7.4	8.2	10.3	10.8	not included
Total	100.0	100.0	100.0	100.0	100.0

This classification of the population by professions is the result of the National Census in Japan proper, 1930.

Finance Since the beginning of its establishment, the Broadcasting Corporation of Japan has pursued its policy of lightening the financial burdens upon the listeners by reducing the subscription fee down to its minimum.

To commemorate the tenth anniversary of the opening of broadcasting in this country and to popularise radio throughout Japan, the Corporation carried out the reduction of the subscription fee from seventy-five sen to fifty sen on April 1st, 1935. This resulted in a great increase in the number of subscribers, viz. the increase for the year ended March 31st 1936, was 443,015. But the net revenue from this fee and others decreased from 15,874,151 yen for the fiscal year of 1934 to 13,447,631 yen for the fiscal year of 1935.

On the other hand, the expenditure, including the depreciation of building

and plant, amounted to 13,088,702 yen for the fiscal year of 1935, showing an increase of 856,071 yen against the last year's.

As it is clear in the following financial statement of the Broadcasting Corporation of Japan, greater part of its revenue is spent on the maintenance and development of the service, as well as on the various kinds of new enterprises.

Among the various items of expenditure, there is the contribution to the Home Office, the sum of 1,262,465 yen for fiscal year of 1935, which was distributed among the prefectures as contribution to sanitary measures. Besides this, the Corporation paid to the Government the sum of 395,446 yen as licence fee which was calculated upon the number of listeners registered at the end of the preceding financial year.

FINANCIAL STATEMENTS OF THE BROADCASTING CORPORATION OF JAPAN

Revenue Account for the year ending March 31st, 1936

EXPENDITURE			
Programmes	¥ 2,541,718.49	Service	¥ 366,948.88
Engineering	1,181,395.72	Collection of Fees	1,651,166.27
Accession	1,393,720.77	Research	121,340.63

Administrative Expenses	¥1,605,422.87
Licence and Contribution paid to Government	1,657,911.63
Expenses for Additions and Betterment	586,785.22
Retiring Allowances	235,000.00
Depreciation of Plant	728,166.18
Miscellaneous	8,275.09
Balance available for the year	1,369,779.54
Total	13,447,631.29

INCOME

Subscription Fees	¥13,088,702.62
Miscellaneous Receipts	358,928.67
Total	13,447,631.29

BALANCE SHEET
As on March 31st, 1936

ASSETS

Land	¥2,503,559.46
Buildings	2,882,865.23
Equipments	2,045,528.80
Loans	1,750,000.00
Securities	375,741.87
Sundry Debtors	225,510.61
Suspense Accounts	41,487.13
Cash in Hand	6,305,533.80
Total	16,130,224.90

LIABILITIES

Capital Account	¥1,382,200.00
Sundry Creditors	169,282.71
Physical Plant Fund	13,206,962.65
Balance available for the year	1,369,779.54
Total	16,130,224.90

CHAPTER XXV

LAND AND AIR TRANSPORTATION

State Railways

Historical Background

Japan's railway projects date from 1869, when the Government formed a plan to lay a trunk line linking Tokyo with Kyoto and Kobé, together with some branches to Yokohama and Tsuruga, a port on the Japan Sea. As the first step, half a million yen was sanctioned for the work between Tokyo (Shimbashi) and Yokohama, but the State Treasury was in no position to find this amount, while private capital declined to venture into this novel field of investment. It was at this time that an Englishman, Horatio Nelson Lay, by name, came forward with a proposal to furnish the required funds. The terms offered by him were accepted and a Japanese loan for one million sterling was placed on the London market. With the arrival of a British engineering corps and materials, the first sod was dug on the 28.962 kilometre Shimbashi-Yokohama section in March, 1870, and on the 32.18 kilometre Kobé-Osaka section in November, 1870. The gauge adopted for these lines was one of 1.067 metres, which has later become the standard gauge of the Japanese railways.

Tokyo-Yokohama and Other Lines
The work between Shimbashi and Yokohama was completed in September, 1872, while the Kobé-Osaka line was opened to traffic in 1874 and its further extension to Kyoto in 1877. These sections have practically formed the nucleus of what now constitutes the Tokaido Line, one of the main arteries of railway traffic in Japan. In 1880, the Kyoto-Otsu section was completed and in 1884 a further extension with a length of 41.834 kilometres between Tsuruga and Nagahama, a town along Lake Biwa, was completed and opened to traffic in pursuance of the railway idea of linking up the Pacific and the Japan Sea. Meanwhile, a survey was made on the Otaru-Horonai section in Hokkaido, where colonization work was being strenuously encouraged. Construction of this section was soon undertaken and the 88.495 kilometre length was opened to business in 1882, thus bringing the total length of railway

under Government ownership toward the close of 1884 to 185.035 kilometres.

Private Lines About this time the Government was in financial difficulties and the building of State railways practically came to a standstill except for a few extensions. It was at this time that, not being in a position to undertake the work itself, the Government began to encourage private enterprise, the encouragement mostly being in the shape of subsidies. Under these circumstances, many private railways were built in rapid succession, the most notable among them being the Nippon Railway, the Sanyo Railway, the Kyushu Railway and the Hokkaido Colliery Railway. The total length of line thus built by private capital in the ten years between 1881 and 1891 aggregated 1,874.405 kilometres, a length more than double that of the State which did not exceed 886.559 kilometres by the end of 1891.

The Trunk Line Prior to this, the Government decided to lay a trunk line through the Nakasendo, the old mountainous highway of Central Japan, but in view of engineering difficulties along this line it was subsequently abandoned in favour of the level region of the Tokaido. Work on the new route was finished in July, 1889, whereby a through service was opened for a distance of 611.42 kilometres between Tokyo and Kobé. Then a branch to Yokosuka was opened and a 160.9 kilometres section between Takasaki and Naoetsu was completed with the exception of 9.654 kilometres over the Usul Pass. This difficult section, for which the Abt rack rail system was adopted, was not opened for service until 1893.

The Railway Construction Law In view of the industrial progress being made in the country there was an urgent demand for the speedy construction of more railways. The entire length of Japanese railways at that time amounted to only 2,574.4 kilometres and the bulk of contemplated lines was in remote districts with no prospect of immediate profit, and on that account did not appeal to private enterprise. These circumstances showed both the

Government and the public the advisability of state acquisition of private lines and opinion was further strengthened by the financial failure of some of the private concerns. In view of this, in 1892, the Railway Construction Law was passed and the Government set to work constructing important lines. The law embodied a comprehensive programme of railway building and contained the guiding principles on which the railway system of Japan was founded. At the same time the matter of consolidating the different lines into one complete system was being studied by a committee of enquiry appointed by the Government. The acquisition of private railways was accomplished in October, 1907, the subsidiary businesses being taken over at the same time. Immediately after nationalization the State Railways were organized under a Railway Bureau, which was directly responsible to the Cabinet. But in May, 1920, a separate Department of State was created to deal with railway affairs and the Minister of Railways was appointed to control it.

Railway Network

The law of 1892 authorized the Government to build certain specified lines within a certain limit of time, and also to buy up such private railways as were judged necessary for the completion of a unified system. Pursuant to this programme the State Railways proceeded with the work of construction and in 1906 and 1907 purchased 17 private lines to a total length of 4,547.034 kilometres, thereby bringing under national control all the railway lines in Japan proper, with the exception of feeding lines of local importance. In 1922 after a careful survey of the State lines the Railway Construction Law was modified and some new lines were added to the original programme. At the same time it was decided that, pursuant to the new law, such local lines as formed a connecting link between the State lines, either already projected or considered necessary for completing a unified national railway system be purchased.

Organization and Staff

Prior to the nationalization of the private lines, the State lines were operated on a departmental system based on the principle of centralization. The system worked well because the management of the State lines was a relatively small business, but when the Government assumed the management of all lines it was found unequal to the extra work, and in December, 1903, the Imperial

Government Railways were removed from the control of the Minister of Communications and assigned to a newly created administrative body, the Railway Board. The administration was then decentralized and remains so today. The existing system of organization of the State Railways was established in May, 1920, when the said Railway Board was made, by virtue of Imperial Ordinance No. 143, an independent department of the Central Government. According to the regulations, the Department of Railways not only controls the whole of the State lines, but supervises the provincial railways and tramways in Japan proper. It maintains one central and six regional offices. The Central Office is directly governed by the Minister of Railways and manages all matters relating to the State Railways as well as maintaining supervision over provincial railways and tramways. It is composed of eight bureaux according to the kinds of business dealt with. They are the Minister's Secretariat; Bureau of Local Railway Administration; Bureau of Traffic and Operation; Bureau of Construction; Bureau of Maintenance and Improvement; Bureau of Mechanical Engineering; Bureau of Electricity; and Bureau of Finance and Purchase. The Central Office also controls Regions, District Construction, District Improvement, District Electric Offices and Tokyo Railway Hospital. On April 23, 1930, by virtue of Imperial Ordinance No. 83, a further bureau, the Board of Tourist Industry was created as a separate bureau of the Department of Railways. The bureau is controlled by the Minister of Railways and attends to the business of the tourist industry, its object being to encourage people of other lands, by advertising and in other ways, to visit Japan and see her incomparable scenic beauty, natural charm and national manners and customs, and to encourage Japanese living at home to take trips to different parts of the Empire.

As stated above, the administration of the State Railways is decentralized into six regions, Tokyo, Nagoya, Osaka, Meiji, Sendai and Sapporo. Each region is a complete unit and is in charge of a director who is vested with power to conduct, at his own discretion, all affairs relative to his jurisdiction, excepting matters of general and large import for which decision of the central administration has to be obtained.

In the State Railways of Japan the members of the staff are either Government officials or employees.

On March 31, 1936 there were al-

together 218,352 (7,948 females) servants in the employment of the State Railways as against 209,456 in the preceding year. The total salary for the year 1935-36 was ¥147,090,026 as against ¥142,471,148 in 1934-35. The average annual salary per person in employment was ¥678. As compared with the preceding year, the staff shows an increase of

8,608 during the year, and the annual payment of salaries increased by ¥5,087,911.

Traffic

Goods and passengers carried by the State Railways in Japan proper since 1914-15 follow:

Fiscal years	Goods	Passengers	Goods Revenue	Passenger Revenue	Daily Average Revenue
	Metric tons	(Unit in 1,000)	(¥1,000)	(¥1,000)	per km. (In yen)
1914-15	35,837,241	166,092	51,750	54,671	33
1919-20	60,899,557	357,031	131,809	161,546	81
1921-22	58,312,333	454,535	167,241	214,519	99
1922-23	65,095,702	512,754	179,220	232,301	103
1923-24	65,818,955	579,288	178,109	249,563	102
1924-25	71,178,263	640,823	194,563	259,047	105
1925-26	73,090,274	683,768	198,786	262,074	103
1926-27	74,780,409	740,333	201,609	266,199	101
1927-28	78,621,788	795,722	211,749	271,523	101
1928-29	79,762,959	847,300	220,686	285,397	103
1929-30	77,224,824	862,939	217,949	279,030	99
1930-31	64,067,099	824,152	184,146	255,086	84
1931-32	60,590,746	787,222	176,124	239,972	77
1932-33	61,732,756	781,149	174,706	233,387	75
1933-34	71,970,592	841,316	198,038	254,534	—
1934-35	77,477,837	913,564	213,467	282,028	—
1935-36	81,039,134	985,041	226,101	291,635	84

In March, 1936, the total working kilometreage of the State Railways reached 17,138.2 kilometres and shows in addition of 603.1 kilometres over the preceding year. The total train kilometreage amounted to 240,799,035 kilometres, being an increase of 18,760,740 kilometres over the preceding year. The number of passengers carried by trains, buses and ships during the year totalled 999,180,517 and the aggregate volume of goods transported amounted to 84,164,852 metric tons. As compared with the preceding year the former showed an increase of 74,077,115 passengers and the latter 3,696,004 metric tons. The receipts from these two sources amounted to ¥534,298,086, showing an increase of ¥27,155,492 over the preceding year.

Motor-car Service In March, 1936, the total working kilometreage of the motor-car service reached 1,766 kilometres with 35 routes, being an addition of 605 kilometres.

The total number of passengers carried over these routes during the year came to 8,284,452. The aggregate volume of goods handled amounted to 47,798 metric tons. The receipts from passengers amounted to ¥1,466,954 and those from goods traffic to ¥112,261, the

total being ¥1,579,215.

Ferry Service At present the State Railways run this service at 5 localities. They are Aomori-Hakodate ferry service connecting the main land with the island of Hokkaido, Shimonoséki-Moji ferry service connecting the main land with the island of Kyushu, Shimonoséki-Fusan route which connects the islands with the Asiatic mainland, Uno-Takamatsu service which links the Sanyo line (main land) with the Island of Shikoku and Hokkaido-Karafuto route linking Japan proper with the Island of Karafuto or Saghalien. Besides, there are a few minor routes provided with smaller steamboats or motorboats for linking such places of note for sight-seeing as Miyajima in the Inland Sea. In March, 1936, there were altogether 60 boats consisting of 30 steamers and 30 harbour boats owned by the State Railways apart from those chartered to private companies. The gross tonnage of these boats amounted to 49,086.23 tons, showing an increase of 128.68 tons in capacity as against the corresponding figures of the preceding year, but the number of boats decreased by 1.

Accident and Casualty Returns The number of accidents reported during the

year totalled 6,662, or 27.2 per 1,000,000 train kilometres, showing an increase of 1,347 in number and of 3.6 per 1,000,000 train kilometres as compared with the preceding year. The number of casualties, including those caused by accidents, errors or unknown causes, numbered 3,562, during the year, or 14.6 casualties per 1,000,000 train kilometres. As compared with the preceding year this is an increase of 56 in the total number, and a decrease of 1 per 1,000,000 train kilometres. The number of casualties caused by suicide was 1,326, or a decrease of 363 as against the preceding year.

Length of Open Lines

The total length of State lines open for traffic on March 31, 1936, the end of the fiscal year of 1935, amounted to 17,030,365 kilometres as against 16,427,480 kilometres in 1934-35, showing an increase of 602,885 kilometres. The total length of tracks reached 27,299,552 kilometres as against 26,520,170 kilometres in 1934-35, indicating increase of 779,382 kilometres. Of the total length of lines open for traffic 14,861,976 kilometres are covered by single tracks, 1,944,939 by double tracks, 29,963 by triple tracks, 173,292 by quadruple and the rest by multiple tracks.

Works and Plants

At the end of the fiscal year under review there were altogether 22 works and 3 detached plants in operation.

On March 31, 1936 there were 14,855 workmen, on the rolls and their monthly wages aggregated ¥905,944.

The number of day's work of workmen in the workshops during the year aggregated 2,346,799 and the expenses involved in the workshops ¥47,145,126, consisting of ¥21,519,537 for the repair and manufacturing expenses and ¥25,625,589 for the purchase of materials and showed an increase of ¥3,373,949 in the total expenditure as compared with the preceding year.

Rolling Stock

The number of locomotives in operation at the end of the fiscal year of 1935-36 was 4,124. The number of passenger carriages aggregated 10,958, the total number of covered wagons was 69,940.

Electric Power

On March 31, 1936 there were altogether 3 power stations, 52 substations, 184 distributing houses in operation. During the year the number of power sta-

tions decreased by 1, the substations increased by 2 and the distributing houses by 3. It should be noted that the power stations and substations within the compound of the workshops have been newly included in the above number as independent ones. Besides, there were altogether 10 alternators representing 99,454 k.w.a., 156 converting machines for electric traction with a capacity of 243,917 k.w., and 616 transformers representing 723,844 k.w.a. in operation at these plants.

Finance

By Railway Special Account Law, enforced since 1909, the budget of the State Railways was made separate of the general finances of the State. Furthermore, the law provides that all capital expenditure for railway construction and improvement should be met from the revenue accruing from all sources of traffic and that the expenditure should, in case the revenue is not sufficient to cover it, be supplemented by the proceeds of public loans issued as a charge on this special account.

Capital Revenue and Expenditure
The addition to the consolidated capital of the State Railways during the year under review came to ¥181,335,312 as accruing from the railway profit, proceeds of the public loans and the miscellaneous receipts transferred thereto, while ¥56,344,022 was deducted therefrom partly on account of the removal and transfer of the railway property and partly owing to the depreciation, the conversion or the redemption of public loans, leaving thus a balance of ¥125,051,290 as the actual increase in the capital. Then the total capital investment of the State Railways from the inception of the Railway operation to March 31, 1936 amounted to ¥3,938,262,738, that is, the balance shown above plus ¥3,813,211,446 the aggregate capital on April 1, 1935. The capital revenue settled for the year 1935-36 was ¥154,033,400 as against ¥151,004,279 of expenditure settled, being an increase of ¥13,718,112 for the former and of ¥26,158,345 for the latter as compared with the preceding year. The increase in the revenue was attributable chiefly to the rise in the amount transferred from the railway profit and sundry receipts, as well as surplus income on the stores account, while the growth in the expenditure was due to the increase of improvements effected sums appropriated for the redemption of liabilities.

Item	1935-36	1934-35	1933-34
	(In yen)		
Capital revenue	153,614,051	139,982,882	127,435,706
Surplus on stores account	419,349	332,406	252,313
Total revenue	154,033,400	140,315,288	127,688,019
Construction, improvement, and motor-car routes	129,200,747	118,145,718	111,449,938
Redemption of debts	21,803,532	6,700,216	6,510,844
Total expenditure	151,004,279	124,845,934	117,960,782

Stores Account The settled amount of Stores Account Revenue for the year 1935-36 was 170,189,041 and the expenditure on this item amounted to ¥172,222,899, or an increase of ¥15,727,108 for revenue and of ¥12,997,239 for expenditure as compared with the previous year. The increase in the revenue was accounted for partly by the larger pro-

ceeds of sales of railway stores, and partly by the increase in receipts accruing from repairs of railway stores and from the supply of electric current while the increase in the expenditure is accounted for by the rise in the stores and workshop expenses and the charge for electric current.

Item	1935-36	1934-35	1933-34
	(In yen)		
Railway stores and workshop receipts	170,189,041	154,461,939	132,574,211
Railway stores and workshop expenses	172,222,899	159,225,660	137,689,094

Revenue Account The total revenue settled during the year amounted to ¥714,822,597 and the total expenditure ¥604,836,595 which are respectively ¥40,411,891 and ¥31,322,619 more than in the previous year. The increase in the revenue was attributable to the increase of the traffic and the sundry receipts, as well as receipts on suspense account

and advances, while increase in the expenditure was accounted for by the growth in working expenses and subsidies to local railways, as well as the increase in refunds and advances appropriated for the C.O.D. payments.

The Revenue Account settled for the past three years is as follows:

Item	1935-36	1934-35	1933-34
	(In yen)		
Revenue:			
Traffic Receipts	538,592,712	512,931,499	468,652,906
Sundry Receipts	10,731,552	10,624,683	9,247,931
Receipts on Suspense Account & Advance	165,498,333	150,854,524	132,002,098
Total	714,822,597	674,410,706	609,902,935
Expenditure:			
Working Expenses	333,854,537	318,543,876	284,784,383
Interest Charges	93,750,891	91,788,215	93,775,493
Refunds and Advances	169,836,599	156,101,827	135,848,919
Secret Service Fund	27,440	27,440	27,440
Subsidies to Local Railways	7,367,128	7,052,616	6,991,443
Total	604,836,595	573,513,976	521,227,678

Fixed assets of the State Railways for the last nine years follow:

Fiscal years	Value at the beginning of the year		Fiscal years	Value at the beginning of the year	Value at the end of the year
	(In ¥1,000)				
1926-27	2,453,092	2,647,453	1929-30	3,062,614	3,246,724
1927-28	2,647,453	2,858,794	1930-31	3,246,724	3,374,392
1928-29	2,858,794	3,062,614	1931-32	3,347,392	3,413,786
			1932-33	3,413,786	3,503,893
			1933-34	3,503,893	3,613,169
			1934-35	3,613,169	3,728,485
			1935-36	3,728,485	3,850,507

BUSINESS INCOME AND EXPENSES				Fiscal	Income	Expenses	Net
(In ¥1,000)				years			profit
Fiscal years	Income	Expenses	Net profit	1930-31	458,140	382,552	75,587
1927-28	506,444	368,277	138,167	1931-32	433,540	365,088	68,451
1928-29	529,256	393,380	135,875	1932-33	425,954	364,874	61,079
1929-30	518,016	399,026	118,989	1933-34	474,254	282,199	192,054
				1934-35	518,668	314,126	204,541
				1935-36	544,935	329,537	215,448

STATISTIC OF THE STATE RAILWAYS OF JAPAN FOR THE YEAR ENDING MARCH 31st, 1936, COMPARED WITH TWO PRECEDING YEARS

Item	1935-36	1934-35	1933-34
Railways			
Area (square kilometre)	*382,545.42	*382,545.42	*382,314.32
Population	*69,254,148	*68,194,900	*67,238,600
Length of lines worked (kilometre)	17,030,365	16,427,480	15,737,077
Single track (kilometre)	14,861,878	14,261,384	13,608,033
Double " (")	1,944,939	1,942,548	1,607,452
Triple and more tracks (kilometre)	223,548	223,548	221,592
Total length of main tracks (kilometre)	19,658,241	19,052,965	18,321,647
Total length of main tracks (kilometre)	7,641,311	7,467,205	7,290,996
Average area per kilometre of the line (sq. km.)	23.288	23.288	24.293
Average kilometreage of lines per 100,000 of population	24.593	24.122	23.418
Average kilometreage of lines worked	{ pass. traffic 16,584.0	15,907.2	15,356.9
	{ goods traffic 16,797.2	16,111.1	15,557.4
Number of Stations	3,393	3,233	3,047
Locomotives (including electric locomotives)	4,124	3,986	4,084
Passenger carriages (including electric cars)	10,958	10,813	10,629
Goods wagons	69,940	67,485	65,804
Employees	218,352	209,456	201,538
Yearly compensation of employees (yen)	147,990,026	142,471,140	137,932,168
Number of passengers carried	985,041,029	913,564,566	841,315,316
Number of passengers carried one kilometre	24,173,052,337	22,573,020,205	20,522,013,177
Average kilometreage of journey per passenger	24.5	24.7	24.7
Passenger earnings (yen)	253,042,633	238,681,479	222,247,143
Passenger earnings per kilometre (yen)	16,427	16,427	14,472
Passenger earnings per pass. per kilometre (yen)	0.0105	0.0106	0.0107
Coaching receipts (yen)	291,635,314	274,036,342	254,533,956
Coaching receipts per kilometre (yen)	17,125	16,685	16,575
Volume of goods hauled (metric ton)	81,039,134	77,477,837	71,970,582
Volume of goods hauled one kilometre	14,011,711,522	13,347,226,184	11,992,352,661
Average kilometreage of goods hauled per metric ton	172.9	172.3	166.6
Goods earnings (yen)	225,343,228	215,615,301	195,183,463
Goods earnings per kilometre (yen)	13,232	13,125	12,546
Goods earnings per metric ton per kilometre (yen)	0.0161	0.0162	0.0163
Goods wagon receipts (yen)	228,101,754	218,681,101	198,038,170
Goods wagon receipts per kilometre (yen)	13,394	13,312	12,729
Passenger train kilometreage (kilometre)	172,254,041	159,331,961	146,712,337
Goods train kilometreage (kilometre)	68,544,994	62,706,334	56,935,274
Total train kilometreage (kilometre)	240,799,035	222,038,295	203,647,611
Steam locomotive kilometreage (kilometre)	224,711,296	211,943,149	202,848,739
Electric locomotive kilometreage (kilometre)	9,283,279	7,944,200	6,896,516
Electric car kilometreage (kilometre)	125,244,288	112,838,595	98,163,060
Passenger car kilometreage (kilometre)	960,563,447	888,331,190	828,321,887
Goods wagon kilometreage (kilometre)	2,325,670,976	2,222,680,466	2,041,482,041
Shipping			
Length of routes worked (nautical mile)	284.0	284.0	284.0
Number of steamers	60	60	63
Aggregate tonnage	49,086.23	48,957.55	48,656.77
Number of passengers carried	7,861,102	7,404,307	6,757,058
Passenger earnings (yen)	5,814,165	5,519,591	4,992,154

Item	1935-36	1934-35	1933-34
Volume of cargoes transported (metric ton)	3,077,922	2,951,679	2,509,512
Cargo receipts (yen)	5,776,685	6,231,869	5,263,032
Motor Car Traffic			
Length of routes operated (kilometre)	1,765.0	1,191.0	544.0
Number of buses	269	183	116
Number of trucks	52	40	25
Number of trailers	40	40	40
Number of passengers carried	6,264,452	4,134,529	2,682,764
Passenger earnings (yen)	1,466,959	918,569	463,983
Volume of goods conveyed (metric ton)	47,796	39,332	25,770
Goods earnings (yen)	112,261	62,978	39,914
Finance			
Capital (yen)	3,938,262,726	3,813,211,445	3,682,426,399
Capital per kilometre of line (yen)	231,254	232,130	233,997
Working revenue (yen)	544,534,114	518,668,073	474,254,016
Working expenses (yen)	329,537,000	314,126,116	282,199,614
Profit (yen)	214,997,114	204,541,952	192,054,402
Percentage of expenses to revenue	60.5	60.6	59.6
Percentage of profit to capital	5.7	5.6	5.4
Profit (yen)	214,997,114	204,541,952	192,054,402
Deduct.—Private Rly. control & survey expenses	¥634,401	508,992	489,620
—Additional works expenses (yen)	3,710,575	3,936,208	2,122,589
—Interest charges (")	93,750,891	91,788,215	93,775,493
—Subsidies to local railways (")	7,367,128	7,052,618	6,991,443
Add. or deduct. (Δ)—Bal. on the suspense account	¥451,884	359,194	—
Balance (net profit) (yen)	109,926,002	100,896,730	88,675,257
Working revenue per kilometre (yen)	32,343	32,115	30,372
Working expenses per kilometre (yen)	19,573	19,450	18,099
Profit per kilometre (yen)	12,769	12,665	12,273

N.B.—* does not cover Taiwan, Chosen and Japanese Karafuto (Saghalien).

Working Results of the State Railways in 1937
The settled accounts of the State Railways for the fiscal years 1936-37 or 1937-38 are not yet available, but a tentative report for the twelve months of 1937 is published by the Railways Department as follows:

	Passengers	Goods (Metric tons)	Passenger earnings	Goods earnings (In yen)	Total earnings	Earnings Increase as against 1936
Railways	878,292,547	64,833,632	267,799,208	207,729,620	475,528,828	49,235,216
Buses	9,461,126	38,212	2,046,717	261,831	2,308,548	593,309
Total	887,753,673	64,871,844	269,845,925	207,991,451	477,837,376	49,828,525

Private Railways

General At the end of March, 1936 the number of local railways in Japan proper was 257, a decrease of 3 as compared with the previous year. The total open kilometreage was 7,097.56 km., an increase of 9.34 km. Their aggregate capital amounted to ¥1,213,858,081, a decrease of ¥884,552.

Traffic During the 1935-36 year the number of passengers carried was 532,134,945, the coaching receipts amounting to ¥64,172,467. As compared with the preceding year the number of passengers carried increased by 32,330,945 or

6.5 per cent. the coaching receipts by ¥1,909,659 or 3.1 per cent. The increase both in traffic volume and coaching receipts was accounted for by the improvement of the financial situation that had been in depressed condition these few years. The average kilometres of journey per passenger came to 8.6 kilometres and the average coaching receipts per passenger ¥0.121, which means that the former remains same, but a loss of ¥0.004 for the latter as compared with the previous year. The total amount of goods moved during the year under review figured 28,129,693 metric tons and the receipts ac-

erued therefrom amounted to ¥21,420,593. There are a gain of 1,301,965 metric tons in the volume and of ¥1,116,933 in the receipts. It appears that the return of business prosperity, coupled with the larger demand for munitions and the heavy crops, has brought about the boom of goods traffic during the year, resulting in the swell of the volume of goods hauled and the receipts therefrom. The average goods receipts per metric ton came to ¥0.761, which was a gain of ¥0.004. Altogether 1,769 accidents took place on all the local railways, in which 308 persons were killed and 477 injured. The number of accidents decreased by 43, the injured by 1, and the killed by 80 against the corresponding figures of the previous year.

Finance The total working revenue of the local railways during the year aggregated ¥94,649,759 as against their total working expenses of ¥53,544,018, leaving a profit of ¥41,105,741. As compared with the preceding year the working revenue showed a gain of ¥3,269,555, and the working expenses ¥1,686,744. The net profit for the year came to ¥35,693,205, which is composed of the profit shown above plus ¥27,930,156 of miscellaneous receipts, less ¥21,120,202 of interest paid and ¥12,222,490 of other charges. The earnings per day per kilometre ¥37.1, and the profit per day per kilometre ¥16.1, showing an increase of ¥1.8, ¥0.9 and ¥0.8 in earnings, expenses, and profit respectively against the figures for the previous year.

Assets and Liabilities Both assets and liabilities of the private railways at the end of 1935-36 fiscal year totalled ¥2,099,261,516.

Employee On March 31, 1936 there were altogether 40,682 employees on the staff of the local railways, their monthly allowances amounting to ¥2,250,318, or a decrease of 163 and ¥3,304 respectively.

Tramcar Service

Growth of Tramways The tramways in Japan date back from 1880, when an application was tendered for the construction of the Tokyo Horse Tram Co.'s line which was completed and opened to traffic in 1883. As provided by the Tramway Law now in force, all the tramways in Japan are constructed as a rule on highways. The street railways, a certain number of suburban railways and others laid in provinces are placed under the control of the Law. Such public bodies as cities, towns and villages may take the management of tramways without restriction. Steam and

electricity are mostly employed as motive power except a few local tramways where gasoline, horse or human power is used for the purpose.

Lines in Operation On March 31, 1936 there were 128 tramways open to business with a length of 2,553.50 kilometres and an aggregate capital of ¥1,509,155,739, being a loss of 7 in number, 61.65 kilometres in length, but a gain of ¥40,962,050 in capital. Classified according to kinds of motive power they are made up as follows:

Kind of power	No. of Tramways	Kilometre-age k.m.	Capital (In yen)
Electric	85	2,047.80	1,473,223,576
Steam	6	115.20	1,441,000
Steam and gasoline combined	10	103.98	3,995,000
Gasoline	10	102.61	23,167,000
Horse power	15	150.47	7,743,000
Human power	6	33.49	185,600
Total	128	2,553.55	1,509,155,739

New Lines, Lines Under Construction During the year 7 tramways with a total length of 9.38 kilometres were newly opened to business, while 2 tramways with a total length of 1.25 kilometres were granted charters for construction. Most of them use electricity as power and aim at conducting transportation in and near towns. The tramways under construction at the end of the year numbered 54 and their aggregate length measured 589.99 kilometres while the total capital amounted to ¥19,670,000, being a decrease of 16 in number, of 195.57 kilometres in length, and of ¥3,358,000 in capital respectively as against the preceding year.

Results of Working The number of passengers carried during the 1935-36 period was 1,608,387,350, the coaching receipts resulting therefrom being ¥108,140,847. Compared with the preceding year the number of passengers increased by 2.4 per cent and the receipts by 3.2 per cent.

The goods carried during the period was 1,609,549 metric tons, and the goods receipts ¥1,280,543, being a loss of 10.9 per cent in receipts and of 10.5 per cent in the volume of goods carried.

The total revenue of the tramways during the year amounted to 114,924,120 as against their total working expenses of ¥69,188,340, leaving a balance of ¥45,735,780 as profit. This was a gain of 1.6 per cent in the revenue, 7.8 per cent in the profit and a loss of 2.1 per cent in the

working expenses. The working revenue per day per kilometre was ¥126.99, the working expenses per day per kilometre ¥76.45, and the profit per day per kilometre ¥50.54, being an increase of ¥3.02 in revenue and of ¥4.05 in profit but a loss of ¥1.03 in the latter as compared with the preceding year. The ratio of the working expenses to the working revenue stood at 60.2 per cent, or a decrease of 2.3 per cent while the ratio of the profit to the construction ex-

penditure was 5.6 per cent or 0.3 per cent more than in the preceding year.

Assets and Liabilities The total capital investment of all the tramways open to business up to the end of the year under review amounted to ¥1,637,138,332 of which ¥1,350,404,810 was paid up and ¥283,016,188 was claimed by construction expenses for open lines. Besides, there was ¥657,489,380 in the shape of debentures, floating debts, overdraft and bills payable, etc.

RESULTS OF WORKING OF LOCAL RAILWAYS IN JAPAN PROPER (1931-32 to 1935-36)

Item	1935-36	1934-35	1933-34	1932-33	1931-32
Number of railways	257	260	266	268	266
Kilometrage opened	7,007.56	7,088.22	7,184.55	7,242.11	7,192.10
Average kilometrage worked	6,963.3	7,076.3	7,156.4	7,173.3	7,035.6
Capital on open lines	¥1,213,858,041	1,233,342,593	1,231,129,999	1,204,113,426	1,160,474,573
Cost of construction of open lines (yen)	981,243,280	991,668,861	970,447,305	965,040,478	951,045,128
Working revenue (yen)	94,649,759	91,606,427	87,402,313	81,680,939	83,132,243
Working expenses (yen)	53,544,018	51,857,275	48,774,967	47,451,820	47,858,971
Percentage of expenses to revenue	56.6	56.6	55.8	58.1	57.6
Profit (yen)	41,105,741	39,749,152	38,627,346	34,229,119	35,273,272
Passengers carried	532,134,945	499,078,493	462,327,690	427,068,098	420,908,801
Passengers carried one kilometre	4,594,747,417	4,306,193,852	4,050,978,409	3,727,530,962	3,647,265,363
Earnings from passenger traffic (yen)	64,172,467	62,262,608	59,062,591	55,430,020	56,980,141
Weight of goods hauled (metric ton)	28,129,693	26,327,344	24,837,594	22,252,511	22,666,760
Weight of goods hauled one kilometre (km.)	585,770,910	554,371,665	533,382,086	505,669,915	468,856,716
Earnings from goods traffic (yen)	21,420,598	26,303,665	19,307,870	17,845,070	17,956,090
Total train kilometrage	17,414,895	17,542,100	18,636,593	19,311,848	20,725,489
Employees	40,682	40,845	40,513	41,572	42,263
Aggregate monthly compensation of employees (yen)	2,250,318	2,252,922	2,169,658	2,254,103	2,332,623

N.B.—The above table does not include the lines belonging to private individuals for their exclusive use.

RESULTS OF WORKING OF TRAMWAYS (1922-23 to 1935-36)

Year ending March 31	No. of tramways	Open kilometrage	Capital (In yen)	Cost of construction	No. of passengers carried
1923	140	2,254.45	1,181,573,643	419,681,809	1,551,282,400
1924	142	2,365.66	1,413,789,941	461,204,010	1,562,816,702
1925	148	2,462.38	1,485,941,725	518,641,727	1,712,999,110
1926	151	2,540.53	1,282,375,328	555,955,531	1,714,200,026
1927	156	2,686.76	1,900,845,592	581,999,017	1,738,044,308
1928	157	2,758.84	2,300,659,307	645,185,688	1,800,126,249
1929	155	2,718.38	2,252,594,154	675,891,891	1,872,007,160

Year ending March 31	No. of tramways	Open kilometrage	Capital (In yen)	Cost of construction	No. of passengers carried
1930	152	2,716.66	2,369,570,652	724,822,987	1,818,087,758
1931	148	2,706.85	2,274,779,504	744,898,995	1,682,195,444
1932	146	2,757.23	2,339,843,674	762,354,434	1,576,669,908
1933	141	2,740.43	2,270,234,409	781,648,493	1,466,674,331
1934	141	2,652.65	2,218,474,136	812,444,149	1,505,459,732
1935	135	2,615.20	1,658,587,395	807,840,784	1,570,929,965
1936	128	2,553.55	1,637,138,332	823,016,188	1,608,397,350

Year ending March 31	Weight of goods carried (m.t.)	Working revenue	Working expenses (In yen)	Profit
1923	2,203,761	113,419,448	62,811,650	50,607,798
1924	2,300,138	110,372,209	65,421,092	44,951,117
1925	2,263,799	126,120,409	71,015,213	55,105,196
1926	2,106,767	129,550,079	75,811,932	53,738,147
1927	2,160,047	130,422,346	75,187,152	55,235,194
1928	1,974,738	137,063,969	77,949,253	59,114,714
1929	1,883,670	143,218,209	82,540,855	60,677,356
1930	1,740,760	140,472,807	80,752,985	59,719,822
1931	1,682,622	128,009,229	77,222,809	50,786,420
1932	1,422,443	116,645,225	72,558,243	44,086,982
1933	1,356,921	109,669,986	68,128,253	41,541,733
1934	1,497,023	110,828,843	67,525,124	43,303,719
1935	1,907,384	113,112,507	70,689,908	42,422,599
1936	1,699,549	114,924,120	69,188,340	45,735,780

Land Transportation in 1937

Reorganization of Transportation Facilities The passing of the nation from the semi-wartime system to the wartime system inevitably led to a strengthening of the control over all kinds of transportation enterprises in the country. The enactment of Small-scale Transportation Enterprise Law and the establishment of the Japan Transportation Company constituted the reorganization of the nation's transportation facilities and marked the entrance of the State into enterprises hitherto left entirely under civilian management. The railway and automobile enterprises under private management, which had been placed under increasingly strengthened State control, were required to augment and perfect their transportation facilities in order to cope with the increased volume of passenger and freight transportation following the outbreak of the China incident. In pursuance of the national economic policy, economy in the consumption of fuel was demanded. Under the circumstances, preparations were made for the enactment of a law for the adjustment of transportation facilities.

Small-scale Transportation Enterprises The question of improving the condi-

tions of the small-scale transportation enterprises in this country, which had been pending for some twenty years, was solved when the Government bill for the Small-scale Transportation Enterprise Law and another for the Japan Transportation Company Law were passed by the 71st session of the Imperial Diet. These legislations which ushered in a new era for the transportation business in this country became effective on October 1, 1937. The system of Government appointment, which had taken the place of the system of official recognition with a view to limiting the number of small-scale transportation enterprises, was thus replaced by the system of license. An outline of the two laws is given below:

Small-Scale Transportation Enterprise Law This legislation enforced the licensing system for small-scale transportation enterprises, requiring those who are about to engage themselves in small-scale transportation enterprises to obtain the permission of the competent State Minister. At the same time those who were already engaged in small-scale transportation enterprises at the time of the enforcement of the law were required to report the mat-

ter to the competent State Minister within three months of the enforcement of the law in order that they might continue their business under the new rule.

Those who come under the provisions of this law include persons who are engaged in transportation business involving the transmission of goods by railways or automobiles, or by means of facilities connected with railway or automobile transportation enterprises. Other major points of the law are enumerated below:

1. The controlling organ is required to issue permission for the continuation of small-scale transportation enterprises after giving due considerations to the demand-supply situation in the transportation business. It may issue orders to persons who are engaged in small-scale transportation business in regard to their operations at any time when such instructions are considered necessary to eliminate defects. Prefectural governors and directors of local railway bureaux are entrusted with a part of the powers of the controlling organ.

2. Those who are engaged in small-scale transportation business are required to notify their freight rates and to keep documents relative to their business. The Minister of Railways may order persons who are engaged in small-scale transportation business to change their freight rates or terms of business when such change is considered necessary in the interest of the public. Similarly, the Minister may issue necessary orders to the small-scale transportation concerns in regard to their spheres of business or the conduct of their enterprises. Further, the Minister is empowered to order the small-scale transportation businessmen to submit reports on their business or cause inspection to be made into the conditions of their business.

3. Persons who have obtained the permission to conduct transportation business under the law are required to obtain the approval of the competent State Minister when they are about to effect any major changes in their business. They include the changing of the railway stations with which they are connected, creation of new offices, removal of officers, conclusion of agreements with other transportation concerns in connection with their business and changes in the specifications of business.

4. Permission granted for the conduct of business may be cancelled in case of violation of orders which are issued

in accordance with the provisions of the present law, or violation of the conditions attached to the grant of permission or approval, or when the persons conducting the enterprises are recognized to be unreliable in the management of their enterprises, or when they are recognized to be unfit to continue their enterprises on account of the undesirable conditions of their enterprises, or when they fail to openly announce their freight rates or when their charges are unreasonable. In such cases a part or the whole of the enterprise concerned may be cancelled, or a fine not exceeding ¥300 may be imposed, in place of the cancellation of the permission. Persons found to be engaged in conducting transportation business coming under the scope of the present law without obtaining the necessary permission, are subjected to a fine not exceeding ¥10.

Japan Transportation Company Law This law was enacted for the purpose of creating a joint stock company with a capitalization of ¥35,000,000 to facilitate the settlement of the accounts relative to transportation companies and the adjustment of specified affairs in connection with the enforcement of the Small-Scale Transportation Enterprise Law. The Government is required to hold half the total shares of the company. According to the provisions of the present law, the president and vice-president of the company as also the directors and auditors are to be appointed by resolution of the general meeting of shareholders. In addition to the afore-mentioned task, the company is authorized to manage enterprises connected with small-scale transportation business.

The legislation provides that the approval of the competent State Minister must be obtained in regard to such important matters as the suspension or discontinuance of enterprises, effecting an alteration in the articles of association, disposition of profits and issuance of debentures. The competent State Minister is empowered to issue necessary orders to the company affecting its management in the interest of the public.

In accordance with the provisions of the law, the Japan Transportation Company was inaugurated on October 1, 1937, incorporating 7 firms with a total of 9,702 agencies.

Increase in Volume of Transportation by Government Railways The business conditions of the Government Railways during the 1936-37 fiscal year ending March 31, 1937, were very satisfactory

due to the activities of the general industrial circles, the total proceeds amounting to ¥570,919,000 which set the highest record for recent years. The amount represented an increase by 9.1

per cent or ¥50,641,000 as compared with the preceding year and exceeded the estimates by 6 per cent or ¥32,476,000. Further details follow:

VOLUME OF TRAFFIC BY GOVERNMENT RAILWAYS DURING 1936-37 FISCAL YEAR

(Unit—1,000)

		Increase over Previous Year
Passengers		
Total number of passengers carried	1,055,737	75,878
Total passenger revenue	¥325,165	¥25,851
Freight		
Total volume of freight shipped	87,950	5,285
Total freight revenue	¥246,750	¥24,790

The principal items of the freight shipped during the 1936-37 fiscal year were coal, mineral ores as well as iron, steel and the manufactures thereof. Shipments to agricultural areas were featured by a considerable increase in fertilizers. A slight decrease was recorded in cotton textiles, cement, lumber, charcoal and gravel.

The proceeds of the Government Railways during the period beginning April 1, 1937, and ending October 31 the same year totalled ¥370,606,000, showing an increase of ¥41,575,000 in comparison with the corresponding period of the preceding year. Further details are shown below:

Passengers	
Total number of passenger	707,711,000 persons (63,596,000 persons)
Total passenger revenue	¥214,987,000 (¥12,647)
Freight	
Total volume of freight	49,234,000 metric tons (5,285,000 metric tons)
Total freight revenue	¥155,975,000 (¥12,027,000)

(Note: The figures in parenthesis denote increases in the respective items in comparison with the corresponding period of the preceding year.)

In addition, the revenue derived from the motor-bus service including bus lines under the management of the

Ministry of Railways for the same period, amounted to ¥1,818,000. The proceeds involved the transportation of 2,700 metric tons of goods and 7,469,000 passengers (2,623,000 persons more than the corresponding period of the preceding year).

The total volume of freight shipped by the Government Railways during the calendar year 1937 amounted to 94,080,000 metric tons which represented an increase of 8,899,000 metric tons or 10.4 per cent over the corresponding figures for the preceding year. Freight receipts totalled ¥270,644,000, gaining ¥33,395,000 or 14 per cent over the preceding year. Coal, iron, steel and minerals were principal items of the freight. Among other commodities connected with war supplies were wheat, fruit, soya beans, cement and horses which showed active movements as a result of the outbreak of the China incident. Details are shown in the following tables:

1. Volume of Freight Shipped by Government Railways in 1937 (In metric tons)

Rice	3,032,000
Wheat	879,000
Lumber	8,439,000
Charcoal	1,186,000
Cotton goods	358,000
Coal	30,694,000
Stone materials	467,000
Gravel	2,940,000
Iron and steel	4,490,000
Fertilizers	3,865,000
Cement	1,349,000
Total	94,079,000

2. Business Results of Imperial Government Railways During 1937

	Average of Railways Operated (in kilometers)	Transportation Volume		Transportation Revenue		
		Passengers (in 1,000 persons)	Freight (in 1,000 tons)	Passenger (in 1,000 yen)	Freight	Total
1936 total	17,529	1,028,875	76,743	315,572	237,088	552,660
1937:						
January	17,539	90,372	6,555	27,854	19,534	47,388
February	17,527	72,658	6,396	23,111	19,290	42,410
March	17,529	86,639	7,746	30,088	23,806	53,894
April	17,531	164,884	7,135	39,319	22,212	61,531
May	17,533	96,415	7,217	31,007	22,246	53,253
June	17,583	79,295	6,896	25,421	21,467	46,888
July	17,652	86,564	6,902	28,380	21,138	49,518
August	17,669	87,308	6,491	33,991	20,751	54,743
September	17,699	95,662	6,877	27,373	22,566	49,939
October	17,807	98,706	7,730	29,728	25,321	55,049
November	17,962	84,290	7,736	25,489	25,436	50,925
December	—	86,292	7,855	27,373	26,618	53,942
Total	—	1,129,105	85,536	349,084	270,394	619,480

(Note: The above figures do not cover the bus lines under the management of the Ministry of Railways.)

In order to obtain the maximum of efficiency and effect economy in the consumption of fuel under the emergency situation, the Government Railways had to suspend parts of the passenger train schedules on three occasions in 1937. The insufficiency of freight cars and locomotives, nevertheless, accounted for the accumulation of 4,700,000 tons of freight during the latter part of November, 1937, and as a means of coping with the situation, the greater part of the usual improvement fund was earmarked for the construction of new rolling-stock in the compilation of the budget for the 1938-39 fiscal year.

Freight Rates for Japan and Manchoukuo It had long been urged that the inconveniences caused by the system of counting freight rates separately for each of the railway systems in Japan proper, Chosen and Manchoukuo should be eliminated and that the freight rates on the railways should be lowered. In order to satisfy this wish, the system of joint counting of freight rates for the railways in Japan proper, Chosen and Manchoukuo has been adopted. The authorities conducted negotiations among themselves for one year, which resulted in the decision to effect the system of joint counting of freight rates on small lots of miscellaneous goods dispatched from Japan proper to Manchoukuo via Chosen.

Business Results of Private Railway Companies The proceeds of the eight

major private railway companies in the Kanto district during the period beginning January, 1937, and ending October of the same year amounted to ¥20,234,000 which represented an increase of ¥440,000 over the corresponding period of the preceding year. The proceeds of the eight major private railways in the Kansai district recorded a gain of ¥2,150,000 during the same period in 1937 as compared with the corresponding period of the preceding year, the amount being ¥44,180,000. The business conditions of local railways, however, were on the whole not quite satisfactory on account of the increased activity of the Government Railways and the bus lines under the management of the Ministry of Railways.

The poor business conditions, coupled with the strengthened control enforced by the Ministry of Railways and the Ministry's policy of effecting a readjustment of private railways, resulted in the closing down of the unfit among the local railways. The number of the local railways obtaining motive power by the utilization of gasoline and electricity gradually increased in the meantime until January 1, 1938, when it reached a total of 225 throughout the country out of 247 private local railways of all kinds open to business at the time. Among them were 104 lines which utilized gasoline in addition to steam for obtaining motive power and 121 lines which utilized electricity. The electric railways included 87 ordinary lines, 25 cable-car lines, 7 ele-

vated lines and 2 underground lines. Details of business conditions of private railways and bus lines follow:

1. General Conditions of Private Railways

No. of Lines	Amount of Capital (in ¥1,000,000)	Length of Lines Open to Business (in kilometers)	Construction Cost (in ¥1,000,000)
257	1,274	7,060	1,023
251	1,321	6,980	1,028
247	1,538	6,876	1,009

2. General Conditions of Private Electric Railways

No. of Lines	Amount of Capital (in ¥1,000,000)	Length of Lines Open to Business (in kilometers)	Construction Cost (in ¥1,000,000)
129	1,512	2,540	823
126	1,550	2,528	823
118	1,787	2,450	844

4. Business Results of Private Electric Railways during 1936 and 1937

(In ¥1,000)

	1st Half of 1936	2nd Half of 1936	1st Half of 1937	2nd Half of 1937
Aggregate paid-up capital	394,684	397,426	412,348	436,013
Profits	18,680	19,510	39,652	20,648
Percentage of profits	9.4	9.8	9.6	9.5
Percentage of dividend	5.7	5.9	5.9	5.7

(Note: The above figures cover 13 companies including five in the Kwanto and eight in the Kwansai.)

5. Business Results of Bus Lines Managed by Private Electric Railway Companies

(in ¥1,000)

	1st Half of 1936	2nd Half of 1936	1st Half of 1937	2nd Half of 1937
Aggregate paid-up capital	8,546	8,546	8,604	10,053
Profits	1,353	1,334	1,403	1,239
Percentage of profits	31.7	31.2	32.6	25.6
Percentage of dividend	9.5	10.0	10.0	9.5

(Note: The above figures cover the Osaka Bus Company and the Tokyo Bus Company.)

Meanwhile there developed a decreasing tendency in new private railway enterprises as shown by the figures in the following tables:

3. Proceeds of Private Electric Railways

	8 Major Companies in the Kwanto Area		8 Major Companies in the Kwansai Area	
	1937	1936	1937	1936
January	2,032	2,001	4,746	4,110
February	1,610	1,563	3,502	3,207
March	2,066	1,690	4,409	3,895
April	2,284	2,420	6,099	5,375
May	5,250	2,169	3,164	5,022
June	1,951	1,672	4,272	3,047
July	1,991	1,888	4,207	3,791
August	2,090	2,105	4,549	4,123
September	1,915	1,877	4,073	3,770
October	2,245	2,109	4,153	4,864
November	—	2,088	—	4,218
December	—	1,930	—	3,776
Total	—	23,511	—	50,019

(Note: The 8 major railway companies in the Kwanto area are the Keio, the Keisei, the Oji, the Tobu, the Tamagawa, the Keihin, the Mekama and the To-yoko. The 8 principal railway companies in the Kwansai comprise the Hanshin, the Hankyu, the Keihan, the Nankai, the Osaka Kido, the Osaka Tetsudo, the Hanwa and the Sankyū.

1. Licenses and Private Railways

	Number of Companies	Length of Railways	Capitalization (in ¥1,000,000)
Lines open to business	247 (10)	6,796 (215)	1,378 (38)
Lines under construction	43 (15)	534 (146)	80 (4)
Lines proposed	59 (18)	942 (233)	333 (50)
Total	269 (25)	8,272 (794)	1,791 (13)

2. Licenses and Private Electric Railways

	Number of Companies	Length of Railways	Capitalization (in ¥1,000,000)
Lines open to business	118 (10)	2,455 (84)	1,565 (55)
Lines under construction	21 (5)	1,344 (69)	— (2)
Lines proposed	33 (3)	315 (92)	15 (2)
Total	123 (15)	4,114 (244)	1,580 (51)

(Note: The above two tables are based on a survey conducted at the end of November, 1937. All the figures in parenthesis which are underlined denote decrease as compared with the preceding year while those figures not underlined denote increase.)

Subsidy to Local Railways The law pertaining to the governmental subsidy to local railways, which had been aimed solely at the promotion of the development of local railways was revised at the 70th session of the Imperial Diet. The revision was intended to enable local railways to continue operation while at the same time endeavouring to improve their conditions. It did away with the previous system of granting subsidy to local railways for 10 years from the day of the commencement of their business and instead provided that the Government should subsidize local railways on the basis of the volume of freight and number of passengers transported by them, the sum to be granted being less than 0.4 per cent of the construction cost minus profits. The revised law was enforced as from April, 1937.

Economy in Consumption of Fuel The necessity of enhancing the efficiency of the transportation facilities under the wartime system within the scope of the national economic policy demanded stringent economy in the consumption of fuel for automobiles, gasoline driven cars and engines. This naturally led to a strengthening of the Government control over the entire transportation systems in the country.

Under the conditions, the Government Railways had to limit or cancel the operation of certain of the schedules on three occasions during 1937. From December 1, 1937, the gasoline driven cars operating in 84 districts throughout the country reduced the number of their trips by from 1 to 10 and the passenger service affecting 29 districts throughout the country was either lim-

ited or suspended. At the same time, the various bus lines under the management of the Ministry of Railways reduced the trips of cars with the object of effecting a saving in the consumption of gasoline by 10 per cent. The local private railways were also urged to take similar steps for economization in the consumption of fuel.

The Fuel Bureau urged the Ministry of Railways to see that its new buses and trucks are equipped with gas-generators, while central government offices were asked to have their automobiles run by volatile oil mixed with alcohol. The bureau also urged the taxi operators to consider a merger, discontinue the system of cruising for fare and adoption of a system of holidays for cars. In regard to the bus companies, the Fuel Bureau urged them to consider rationalization of their management and to eliminate competition among themselves.

The fuel committee of the league of economic organizations decided on the following measures:

1. Economization in the consumption of gasoline by taxis, buses, trucks and private cars: (A) To adopt the quota system for the distribution of gasoline to the various automobiles according to the purposes of their operations; (B) To enforce the quota system by regarding each company as a unit in the case of business cars, urging the management concerned to effect a voluntary control over the operation of its cars within the limits of the allotted gasoline; (C) To allot gasoline to cars other than those mentioned in the foregoing clauses, on the basis of a ration ticket system; (D) To give

holidays to taxis and put restrictions on the cruising hours of taxis.

2 Encouragement of the use of substitute fuels: (A) To encourage the use of fire-wood, charcoal, Diesel-oil, alcohol and natural gas in place of gasoline; (B) To promote researches in substitutes for gasoline for the operation of automobiles.

In deciding upon the above measures, the fuel committee expressed its opinion that the amount of gasoline to be saved should be determined by the Government and the Government should issue a decree pertaining to it rather than leave the matter to the different interests concerned.

In response to the foregoing suggestions, the car owners, particularly the taxi operators in the principal cities throughout the country studied and executed various measures for effecting the necessary economy in the consumption of fuel, such as the adoption of a holiday system for taxis, discontinuation of the previous system of cruising for fare, creating parking stations for taxis and paying attention to the economical operation of cars.

The year 1937 was also characterized by a remarkable tendency toward the use of substitutes for gasoline for the operation of automobiles. As a result of the positive encouragement given by the Government, the bus lines in Tokyo embarked upon the task of reconditioning their cars into charcoal cars (the Government bearing half of the necessary expenses). The Kyoto Godo (joint) Taxi Company worked out a plan to operate their cars by electric power. Plans for Diesel-oil cars, charcoal cars, electric cars and natural-gas cars were announced one after another.

Control over Automobile Business
The automobile transportation business had already been placed under the control of the Government according to the provisions of the Automobile Traffic Enterprise Law. The control had been enforced principally in the form of urging the re-arrangement of business lines, reduction in the number of enterprises, expansion of individual enterprises and perfection of the equipment of cars and somewhat satisfactory results had been recorded. The demand for an economy in the consumption of fuel, however, necessitated a strengthening of the control.

Under the strengthened control, the Government urged various bus lines to cut short their routes and eliminate competition with each other. At the same time, the Government turned

down a large number of applications for permission to establish new bus lines or expand existing ones. As a means of eliminating the evils of reckless competition between the medium-size and small-scale taxi operators, the creation of taxi control companies was urged in Tokyo and Osaka. Further, a policy was adopted to refuse registration of new cars under certain circumstances and the restrictive tendency fast became a nation-wide phenomenon.

At the end of 1937, the number of automobile commercial associations throughout the country totalled 76. In accordance with the policy of the Ministry of Commerce and Industry for a national control over such associations, a national federation of commercial automobile transport associations was organized with the Tokyo freight automobile transport commercial association as its nucleus. Immediately after its inauguration, the federation started preparing to deal with the tendency for an abnormal rise in the price of gasoline by making joint purchases and instituting other measures of control.

Tourist Industry

Three organizations, viz., the Board of Tourist Industry, the Japan Tourist Bureau (founded in 1912), and the Kokusai Kanko Kyokai (founded in 1921), a foundation devoting itself solely to the carrying out of travel publicity abroad, and forming the hub from which radiate innumerable lines connecting it with other important organizations, such as the Society for International Cultural Relations and other cultural bodies, tourist associations in various districts, transportation concerns, hotels and all other organizations that have anything to do with the tourist industry of Japan.

The Board of Tourist Industry is divided into two departments, one for general affairs and the other for business promotion. In addition to these, it has three boards of investigation dealing with tourist resorts, hotel enterprises and treatment of tourists respectively. These boards comprise experts of the government and the public on the respective subjects. The Committee of Tourist Industry holds its general meeting at least once a year, when it decides what course to follow in carrying out any important undertaking.

The Kokusai Kanko Kyokai runs an office in New York and Los Angeles, though the actual business is carried on there in the popular name of the Japan Tourist Bureau.

The branch offices of the Japan Tourist Bureau, both in Japan and abroad, number about 130 in all. Besides, it has agents in some important cities abroad in order to make the network of its service as extensive and satisfactory as possible.

Since the establishment of the Board of Tourist Industry, tourist organizations of a non-commercial nature have been successively founded in many parts of Japan, and at present the total number is in the proximity of 400.

During the past two or three years, an annual increase of over 20 per cent has been recorded in the number of foreigners who visited Japan. According to statistics issued by the Board of Tourist Industry, the year 1935 witnessed the entry into this country of 42,629 foreigners, not including the 2,700 passengers on ships making a world-cruise, 132,700 through passengers on ordinary boats and 500,000 members of the crews of various vessels which called at Japanese ports during the same year.

The total amount of money spent in 1935 in this country by foreigners was ¥90,019,000 of which ¥70,242,000 was spent by tourists, according to the estimate of the Ministry of Finance. During the same year, Japan exported cotton piece-goods to the amount of ¥490,000,000 raw silk to the amount of ¥380,000,000, rayon textiles to the amount of ¥120,000,000 and silk textiles to the amount of ¥77,000,000. It will be noted that the amount of money spent in this country by tourists came very near the value of the export of silk textiles.

The total number of foreigners visiting this country did not increase much in 1936 over the figures for the preceding year, but the same rate of increase as before was recorded in the number of those who travelled the country for sightseeing. Particularly noteworthy is the fact that a remarkable upward ten-

dency was indicated in the number of tourists coming from Manchoukuo and other East Asiatic countries.

In consideration of the future of Japan's tourist industry, special mention must be made of the fact that elaborate preparations have already been commenced for holding the 12th Olympic Games in Tokyo in 1940 which will also be the 2,600th anniversary of the foundation of the Empire. Besides various national enterprises in connection with the celebration of the anniversary, international conferences in varied fields are also expected to be held in this country during that year.

It is rather difficult to form any idea as to the number of foreign visitors likely to visit Japan in 1940, but the Board of Tourist Industry and other organizations are looking for it as an epoch-making year in the history of tourist industry in Japan. The rate of increase of foreign visitors during the past 15 years, 1921-1935, has been 5 per cent per annum, and their number in 1940 will under ordinary circumstances reach 53,000, while the 12th Olympiad and some 10 international gatherings are bound to add several thousands to this number.

The governmental authorities and the civilian organizations concerned are energetically devising ways and means to promote the tourist industry in conformity with the exceedingly favourable situation. Apart from the question of perfecting sporting facilities and means of transportation, plans are under consideration for the improvement of roads, traffic, sanitation, hotels and amusement facilities. The establishment of an international sea-bathing resort has been proposed and some organizations are sponsoring the creation of better facilities for the study of Japanese culture, by means of museums, art galleries, etc.

FOREIGNERS WHO VISITED JAPAN

In 1935

Nationality	Duration of Stay			Total	Purpose	
	Less than 15 days	Less than 3 months	More than 3 months		Sight Seeing	Official Business
Americans	6,004	2,015	1,092	9,111	6,188	53
Canadians	212	72	91	375	206	1
Britishers	3,404	2,908	981	7,293	4,591	54
Germans	459	579	505	1,523	620	14
Frenchmen	327	415	152	894	499	11
Russians	462	480	338	1,280	206	125
Hollanders	346	309	134	789	546	8
Indians	131	217	380	728	241	0
Philippinoes	274	214	49	537	386	0

Nationality	Duration of Stay			Total	Purpose	
	Less than 15 days	Less than 3 months	More than 3 months		Sight Seeing	Official Business
Chinese	2,160	1,415	10,685	14,260	1,314	182
Others	1,182	1,235	3,422	5,839	1,248	288
Total	14,941	9,859	17,829	42,629	16,045	708
1934	12,850	8,863	13,483	35,196	11,837	639
Increase or decrease (-)	2,091	996	4,346	7,433	4,208	17
Percentage of Increase of Decrease (-)	16%	11%	32%	21%	35%	3%

Nationality	Commercial Business		Miscellaneous	Total	%	1934	Increase
	Business	Miscellaneous					
Americans	448	2,422	9,111	21.4	7,947	1,164	
Canadians	26	142	375	0.9	380	-5	
Britishers	469	2,179	7,293	17.0	6,391	902	
Germans	240	649	1,523	3.6	1,313	210	
Frenchmen	47	337	894	2.1	883	11	
Russians	279	670	1,280	3.0	1,427	-147	
Hollanders	78	157	789	1.9	666	123	
Indians	329	158	729	1.7	669	60	
Philippinos	17	134	537	1.3	385	152	
Chinese	1,346	11,448	14,260	33.4	12,676	1,584	
Others	388	3,915	5,839	14.0	2,459	3,380	
Total	3,667	22,211	42,629	100	35,196	7,433	
1933-34	3,660	19,010	35,196				
Increase or decrease (-)	7	3,201	7,433				
Percentage of Increase or Decrease (-)	0.2%	17%	21%				

Railways in Chosen, Taiwan, Manchuria, etc.

Chosen

The first railway enterprise in Chosen dates back to 1890, when a railway linking Kéijo (Seoul) with Jinsen (Chemulpo), 29,485 kilometres in length, was laid and opened to traffic by the Kéi-Jin Railway Company. The outbreak of the Russo-Japanese War caused the military authorities of Japan to build the Kéijo-Fusan, Kéijo-Shingishu and Masan lines which were opened to traffic in 1905 and 1906 respectively. In 1906 the Imperial Government of Japan nationalized the Kéijo-Fusan Line and also took over the Kéijo-Shingishu and the Masan Lines from the War Office of Japan, placing all these lines under direct control of the Railway Bureau of the Korean Residency-General. Meanwhile the work of construction was steadily pushed on and in 1910 the Héijo-Chinnampo line was completed. On the spanning of the Yalu River with a swing bridge in 1911 the peninsular railway was brought into connection with the South Manchuria Railway. In 1914 the Taiden-Mokpo and Kéijo-Gensan lines were completed, while in 1915 part of the Gensan-Kainéi line was opened. In 1923 the Kankyo line which connects

Kainéi to Gensan was completed, and in 1933 the Tomon line which connects Kainéi to Yuki was opened to traffic. The latter is connected with the Keito line of S.M.R.C. at Kainéi, thus preparing a new eastern transportation facility between Chosen and Manchoukuo. On March 31, 1936, the State Lines in Chosen open to business totalled 3,389.5 km. as against 3,077.4 km. in 1935 showing an increase of 312.1 km. The number of passengers carried aggregated 29,344,188 as against 1,763,134,433 of the number of passengers carried 606 kilometre, while the weight of goods hauled was 6,667,642 metric tons as against 1,788,692,364 ton-kilometres. The coaching receipts amounted to ¥25,172,471 and goods receipts to ¥28,305,426, and the total ¥56,477,897. As compared with the preceding year the number of passengers shows an increase of 3,729,373, and the volume of goods hauled an increase of 985,866 metric tons, while the coaching receipts increased by ¥3,614,470 and goods receipts by ¥2,514,913 and ¥6,329,383 for the total. The average revenue per day came to ¥154,311, the average revenue per kilometre to ¥17,864, the average revenue per day per kilometre to ¥49,81, being an increase

respectively of ¥16,918, ¥905 and ¥3.17.

The aggregate length of private railways open to traffic on March 31, 1936 amounted to 1,091.9 kilometres, the length of lines under construction 70.9 kilometres, and lines contemplated but not yet granted charters 228.6 kilometres, the total length of all these lines amounting to 1,415.6 kilometres. The number of private companies which are already operating railways in Chosen numbered 10, viz., Chosen Railway Company, Chosen Keinan Railway Company, Kongosan Electric Railway Company, Shinko Railway Company, Chosen Keito Railway Company, South Chosen Railway Company, Chosen Gas & Electric Company, South Manchurian Railway Company, Sennari Railway Company, and Kusan Municipal Railway. Besides, there were two railway companies which were provided with a charter but had not begun work. Of the above mentioned companies the former five receive regular subsidies from the Government. The aggregate capital of the five subsidized companies amounts to ¥80,300,000 of which ¥37,380,000 is paid up, while the total capital of 7 other non-subsidized companies came to ¥21,206,000. The total length of tramways operated in Chosen came to 8.23 kilometres indicating a gain of 1.4 kilometres over the previous year. The power used is mostly electricity. (See Chapter XL for fuller information.)

Taiwan

It was not until the cession of the island of Formosa (Taiwan) from the Chinese Government to Japan that the island began to enjoy railway facilities, for, prior to that time, the only railroad existing was a small light railway between Keelung and Shinchiku built at the time of the Ching Dynasty. Soon after the cession, the Taiwan Government-General brought forward a plan, with the approval of the Diet, to build a railway connecting Takao with Keelung at the expense of ¥20,000,000. Work was started in 1889 from both termini and finished in April, 1908. This line now forms the trunk line in the island's communication system. The construction of this pioneer line was followed by other lines, that is, the Kyukyodo-Keito section completed in 1912, the Tai-to line in 1917 and the Giran line in 1924. The length of lines open to traffic on March 31, 1936, was 881.7 kilometres, being the same as the preceding year. The working route kilometreage of the Government lines at the end of line in 1917 and the Giran line in the train kilometreage during the year

9,305,713 kilometres, the vehicle kilometreage 139,334,870 kilometres, being an increase of 336,988 kilometres for the train kilometreage and an decrease of 21,023,427 kilometres for other vehicles. The number of passengers carried came to 20,519,093, the volume of goods hauled to 6,259,684 metric tons and the earnings accruing from these two sources to ¥24,104,170. Compared with the corresponding figures for the preceding year the number of passengers increased by 2,374,756, the volume of goods by 553,557 metric tons and the total earnings by ¥2,779,471.

Most of the private railways existing in Taiwan were originally constructed by sugar refining companies for transporting sugar and other materials, transportation business being conducted only as a side work. At the end of March 31, 1936, there were 18 companies with the total working km. of 2,381.4 while the balance 1,866.4 km. were for the exclusive use of the companies owing to them.

The tramways, which form an important factor in the island communication system, have made a marked development in recent years. The total length of lines in operation on March 31, 1936, was 1,218.8 km., the number of passengers carried aggregated 3,257,635 goods moved 570,863,400 m.t. and the total receipts ¥1,601,235.

Karafuto Railway

The first railway in Karafuto (Japanese Saghalien) was constructed by the Military Department in 1906 between Otomari, formerly known as Korsakovsa, and Toyohara, formerly Vladimolocka, 41.83 km. in length. It was a light railway with a gauge of 0.61 metre and exclusively used for military purposes. With the withdrawal of the military Government in April, 1907, the railway was transferred to the control of the Karafuto Administration and opened to public traffic in August of the same year. As traffic went on increasing the gauge was widened to 1.07 metres, some time in 1910, while construction of sections further north of Toyohara was started. Late in 1911 the work on the Toyohara-Sakaehama section being completed, the Otomari-Sakaehama section, 94.13 km. which now forms the trunk line in the island's communication, was opened to traffic. Construction work has been continued since and a branch line linking the Kawakami Mine with Konuma, and the Honto-Noda section on the west coast were completed and opened to business in 1914 and 1920 respectively. In addition, the construc-

tion of a branch line which connects Toyohara, the capital of the island, with Maoka on the west coast, was started in 1921 and opened to business in 1922.

The lines in operation at present totalled 342.9 kilometres, remaining the same as the previous year. The total number of passengers who travelled by the railways during 1935 totalled 1,608,325 and showed an increase of 205,843 or 14.7 per cent as compared with the previous year, and the receipts showed a gain of ¥117,012 the total receipts being ¥947,651. The total of both passenger and goods receipts amounted to ¥2,459,977 showing an increase of ¥401,519 over the receipts for the preceding year.

There are altogether three local railway companies that have run railway business in Karafuto.

South Manchuria Railway

It was on September 5, 1905, that the Japanese Government, by virtue of Article V of the Peace Treaty concluded between Japan and Russia, acquired possession of the railways in Manchuria from Changchun to Dalny, now Dalren, and Port Arthur, now Ryojun, together with its branch lines, all the rights, privileges, and property attaching thereto, including the local mines formerly owned by the Chinese Eastern Railway. On June 7, 1906, Imperial Ordinance No. 142 was issued concerning the establishment of the South Manchuria Railway Company and on July 13 of the same year General Viscount Gentaro Kodama was appointed chairman of the promoters' committee which were composed of 80 members. On July 25, 1906, the presidency was assumed by General Viscount Masataké Terauchi, the then Minister of War, due to the death of General Kodama. The articles of association relative to the company were prepared by the committee on the basis of the Imperial Ordinance and the instructions of the Government.

Motor Transport and Its Development

Behind Japan's motor transport system there is no such history of experimentation and endeavour as characterizes the arrival of the motor car in the West. The first car seen in Japan was one imported from America by a foreign resident of Yokohama in 1897, and then for the next ten years there was no great increase in the number. In 1907 there were only 16 cars in the whole country. Then came a change. In 1912 there were 520 vehicles and a year later 1,000. In 1921, passenger cars

They were approved by the Government on August 18 and the establishment of the company was sanctioned by the Minister of Communications on November 4, 1906. The authorized capital of the company at first was ¥200,000,000, of which ¥100,000,000 represented the total of the appraised value of railways with properties and the mines at Fushun and Yentai as handed over to the company by the Military Field Railway Department. The other half of the capitalization was offered to public subscription and the shareholders were guaranteed a 6 per cent dividend per annum by the Japanese Government. By March, 1930, 800,000 shares representing 80 million yen were paid up, but with the development of various activities after the World War the capitalization was increased to 440 million, one-half of the increased capitalization being taken up by the Japanese Government. The company is authorized to issue debentures not exceeding twice the amount of paid-up capital, and not exceeding the amount of total capitalization. The company has often issued debentures on the home and foreign markets and on such occasions both the principal and interest have been guaranteed by the Government. The total capital paid up on March 31, 1936 amounted to ¥594,208,000 and the capital unpaid to ¥251,792,000. The total length of lines open to business was 1,129.1 kilometres. The gauge of these lines was 1,067 metres at first, excepting the Mukden-Antung Line. The company shortly after its establishment rebuilt the lines to the standard gauge of 1,434 metres. The doubling of track between Dalren and Hsinking, 704.3 kilometres, was completed in 1915. In the year 1935 the number of passengers carried was 15,122,922 and showed an increase of 1,336,519 over the previous year. Goods carried aggregated 20,980,701 m.t. The income from these came to ¥123,774,483. (See Chapter on Manchoukuo.)

numbered 4,683 and business cars numbered 7,439. The great earthquake and fire which destroyed Tokyo and Yokohama in 1923 brought about a great demand for motor cars because rail traffic was interrupted at various places and the help of motor cars was badly needed. In 1924, the number increased to 40,070, of which 27,959 were passenger cars and 12,097 were trucks. The rate of increase for the five years 1921-26 was for passenger cars 100.49 per cent and for trucks 1,200.6 per cent. This

rapid development of motor car transport has driven rikishas, electric cars and provincial railways into the background. Motor-car passengers are increasing year after year, while passenger receipts on provincial railways are quickly decreasing. To the present, except in the vicinity of large cities, Japan has not been blessed with good roads, but the construction of first-class

motor roads is being pushed ahead in all parts of the country and traffic is bound to make a phenomenal increase as the roads are completed.

Number of Cars According to the statistics taken by the Police Bureau, Home Ministry, the number of all kinds of cars in Japan proper was 175,904 at the end of 1935.

NUMBER OF MOTOR CARS IN JAPAN PROPER

At the end of	Ordinary Cars		Trucks	Special Cars	Small Cars	Total
	Private	Taxicabs				
1933	7,723	59,010	30,199	5,187	25,124	135,234
1934	7,970	62,511	42,059	4,938	39,095	156,573
1935	9,213	64,795	46,918	5,065	49,913	175,904

Number of Cars in Principal Prefectures in 1934

	Ordinary Cars	Trucks	Special Cars	Small Cars	Total
Tokyo	17,608	9,918	1,104	12,733	41,363
Osaka	5,732	3,975	467	8,438	18,612
Hyogo	3,535	2,089	211	3,193	9,028
Kanagawa	3,055	2,199	129	1,889	7,272
Aichi	3,404	2,872	448	3,962	10,686
Shizuoka	2,338	1,793	134	1,371	5,636
Fukuoka	2,798	1,002	210	1,221	5,231
Kyoto	2,475	1,321	164	1,748	5,708

Figures of the National Resource Bureau taken at the end of October 1936 are as follows:

Number of Cars in the Empire (October 31, 1936)

	Cars	Trucks	Special	Total
Japan proper	79,775	50,437	3,882	134,094
Colonies	9,233	5,645	663	15,541

Commercial Passenger Cars Although the available figures are old, the business mileage of commercial passenger motor vehicles by fixed lines at the end of 1930 totalled 122,284 kilometres. If the business mileage of motor trucks by fixed lines be added, the total amounts to more than 160,900 kilometres. There were many cases of duplication of services by competitive lines, but if the actual business mileage is estimated as being one-third of the above total, it will be found that it was more than double that of the Government-owned and private railway and tram-car services combined. The total number of companies and individuals engaged in bus business in 1935 reached

3,423. Among prefectures Fukuoka led with 204. The other prefectures which had over 100 were as follows: Kumamoto 159, Fukushima 186, Hokkaido 161, Oita 138, Hyogo 131, Hiroshima 102. These figures do not necessarily represent the prosperity or better facilities for motor transportation in the districts, but in many cases simply indicate the absence of any effective control of the business. The worst instance of the case is a road in Kumamoto where 10 buses are running.

The Ministry of Railways is going to control over such disorder or competition according to the Motor Transportation Business Law promulgated in 1934.

The prefectures which had geographical and geological handicaps had smaller numbers such as Okinawa 9, Tottori 30, Nara 25, Fuku 38, and Kochi 22. The prefectures in which the six big cities are located had comparatively small numbers indicative of a good control, i.e. Tokyo 71, Kanagawa 74, Osaka 36, Aichi 70 and Kyoto 50.

(As to the production and supply of motor cars in Japan see Chapter XIX.)

Aviation

History of Development
The Early Period During the Satsu-

ma Rebellion in 1877, two balloons were built. In 1891, Mr. Chuhachi Ninomiya made a model of an aeroplane shaped

like a bird from his own design, and, in 1894, another shaped like an insect. In 1897, Mr. Isaburo Yamada obtained a patent for a kite balloon of his own invention. Two of these kite balloons were used in the siege of Port Arthur during the Russo-Japanese War. In 1907, a balloon corps was organized in the Telegraph Corps at Nakano, and, in June, 1909, a special military balloon investigation association was established. In March, 1910, a gliding test of aeroplane No. 1 of the Hino type was made at Toyamagahara, Tokyo, and, in October that year, a flying test of an aeroplane of the Narahara type was made. On December 19 of the same year, Lieutenant Tokugawa (now Lieutenant-General) flew 3,000 metres in four minutes in a Farman aeroplane at Yoyogi, and Captain Hino flew in a Glady aeroplane. This was the first time that an aeroplane flight was carried out in Japan.

The First Civilian Flight In the spring of 1911, airship No. 2 of the Yamada type was taken out of the hangar at Osaka, Tokyo, and made a successful cross-country flight. In March and April of the same year, an American flyer carried out an exhibition flight in Osaka and Tokyo; on April 5, Mr. Shinzo Morita, who had studied flying in France, flew in a 45 h.p. monoplane over the Joto parade-ground in Osaka, this being the first flight by a civilian flyer in this country; and, in April that year, the aerodrome and flying ground at Tokorozawa were completed. In June, 1912, Mr. Atwater, an American flyer, conducted a series of exhibition flights by hydroplane on the sea off Nishinomiya near Osaka; and, in July that year, five officers were selected from each army division to be trained as flying officers. This marks the beginning of instruction in flying to military officers in this country. In the autumn of 1912, a number of aeroplanes and airships participated in the grand military manoeuvres. In February, 1913, the Teikoku Hiko Kyokai (Imperial Aeronautical Association) was established; on May 4 that year, Mr. Koha Takéishi, a civilian flyer, started on a Naruo-Osaka-Kyoto flight, but, when landing in the Fukakusa parade-ground in Kyoto, he met with disaster and died as the first victim of civilian aviation in Japan.

Contest of Civilian Aviators In 1914, a contest by civilian aviators was held at Naruo, near Osaka, under the auspices of the Imperial Aeronautical Association, and, during the Tsingtao campaign Japanese military aeroplanes took

part in actual fighting for the first time and displayed their ability in scouting, in bombing the enemy fortress and in an aerial combat with enemy planes. In 1915, a meet of civilian flyers was held in Osaka, and a military flying battalion was formed. Between January and April, 1916, American aviators visited Japan and performed trick flying at Naruo and other places; and, on April 27 that year, night flying was successfully carried out for the first time in this country. In 1917, the flying battalion was enlarged into the first and second battalions and a balloon corps. In April that year, Mr. Art Smith, an American flyer, again visited Japan and carried out a series of high-class exhibition flights in Osaka and Tokyo. In April, 1918, Mr. Masao Goto, a private flyer, succeeded in making a non-stop flight between Tokorozawa and Osaka for the first time.

Military Flying School In April, 1919, the Military Aeronautical Department and the Military Flying School were established; and, on October 22 that year, the first mail transport flight between Tokyo and Osaka was carried out with success. In 1920, the Aeronautical Institute was established at Tsuchishima, Tokyo; and in May that year, two Italian aviators paid a visit to Japan by air. In March, 1921, the regulations for the control of aviation were put in force. In the autumn of 1922, the Japan Aerial Transport Institute started a regular flying service between Sakai and Shikoku by hydroplanes. In 1923, the military air force was made an independent arm. The Osaka Asahi Shimbun started a regular air service between Tokyo and Osaka in January and the Japan Aerial Navigation Co., Ltd., opened one between Osaka and Beppu in July that year. In March, 1924, the dirigible S. S. No. 1 exploded and, in September of that year, the trial flight of the newly built airship Astra was carried out.

Air Mail Traffic In April, 1925, air mail traffic was started between Tokyo and Osaka; and, on July 25 that year, an aeroplane of the Asahi Shimbun took off from the Yoyogi parade-ground in Tokyo and, on October 27, reached Rome after a flight of 16,000 kilometres (in stages) via Moscow, Paris and London. In 1926, the Japanese Navy purchased from Italy the dirigible S. No. 2 which was one with a semi-rigid envelope, introduced into Japan for the first time. In June, 1927, the Aviation Law came into effect. In May, 1928, Coast Defence Association successfully

carried out a flight round the mainland, and, in October that year, the dirigible S. No. 3 exploded, while participating in the grand naval manoeuvres. In April, 1928, Mr. Habuto, a civilian aviator, established a new record by flying 2,000 kilometres in 13 hours and 23 minutes; and, in July that year, aerial defence manoeuvres were conducted in Osaka.

The Air Transport Co. In 1929, the Japan Air Transport Co., Ltd., was established and inaugurated a regular air passenger service between Tokyo, Osaka and Fukuoka, later extending it to Seoul and Dairen; and two Army scouting planes of the 88 type flew between Tachiarai and Hêito without stopping, making a record of aerial connection between the mainland and Taiwan. On their homeward flight, one of the planes flew for 15 hours and 15 minutes, thus establishing a new record of staying in the air in this country. In 1930, the Japan Students' Aviation League was formed and associations for the study of aviation were established one after another in different universities and colleges in Tokyo and Osaka. Mr. Yoshihara, a civilian flyer, flew from Berlin to Tokyo via Siberia in 11 days and simultaneously, Mr. Azuma, also a civilian flyer, reached Tokyo from Los Angeles via New York, London, Berlin and Siberia. In March, 1931, the airship No. 8 which had been made in Japan and belonged to the naval air force at Kasumigaura took off and stayed in the air for a record length of time of 60 hours and one minute.

The Aeronautical Institute In May, the Aeronautical Institute which ranks as the best research station in the world was completed six years after the starting of its construction. In the same month, the aeroplane "Young Japan" belonging to Hosei University, a member of the Students' Aviation League, set off for Europe from the flying ground at Hanéda near Tokyo and, at the end of August, reached its destination, Rome. After the outbreak of the Manchurian trouble in September that year, our military planes participated in actual warfare for the first time since the Tsingtao campaign. In October of the same year, the aeroplane (Fokker No. 3-M) of the Japan Air Transport Company succeeded in flying between Taiwan and the mainland. In 1932, as a consequence of the Manchurian trouble, 64 "Askoku" (Patrol) planes were constructed with money contributed by the people generally, and, moreover, defence from

aerial attack became much discussed in our principal cities and important economic centres.

Present Condition of Civil Aviation

Modest but definite progress of commercial aviation in Japan is indicated in the annual report of the Japan Air Transport Company, which reports mails carried by the company's planes during the year 1934 totalled 1,268,435, recording almost a 50 per cent increase over the 847,601 of the previous year. Commencing with April 1, 1935, the company has resumed night flying and also has inaugurated a special early morning service bringing Mukden within a day's reach from Tokyo by way of Seoul and Dairen. The early morning service was extended to Hsinking, the capital of Manchoukuo, on May 1. Further expansion of commercial aviation is expected to be facilitated considerably by the 15-year Government subsidy plan adopted by the Communications Ministry last year with a tentative budget of ¥200,000,000 for the whole period and originally a sum of ¥5,500,000 for the 1935-36 year but later cut to a smaller amount. During the last fiscal year the Japan Air Transport Company maintained the longest route of service totalling 2,118 kilometres between Tokyo and Dairen by way of Nagoya, Osaka, Fukuoka, Urusan, Seoul, Hêijo and Shingishu. Of the other aviation concerns Japan Aviation Research Institute maintains a 290-kilometre service between Osaka and Matsuyama in Shikoku, by way of Takamatsu; the Tokyo Air Transport Company a 150-kilometre service between Tokyo and Shimoda; the Tokyo Asahi Shimbun-sha, Ltd., a 415-kilometre service between Tokyo and Niigata; and the Japan Marine Air Transport Company a newly opened service between Matsue, Shimané Prefecture, and Hirosaki on the Japan Sea coast. The Tokyo-Shimoda service is operated only between May and September and the Tokyo-Niigata service between May and October. In 1934 the total distance of commercial air routes in Japan was 3,751 kilometres.

Except the Japan Air Transport Company, which has a paid-up capitalization of ¥4,000,000 all Japanese commercial aviation firms are still operated on extremely limited scale, while even Japan Air Transport is assisted by an annual Government subsidy of ¥500,000.

Japan had a total of 235 civil aeroplanes, on October 1, 1935. The Japan Air Transport Company opened to business in April, 1929, and since its opera-

like a bird from his own design, and, in 1894, another shaped like an insect. In 1897, Mr. Isaburo Yamada obtained a patent for a kite balloon of his own invention. Two of these kite balloons were used in the siege of Port Arthur during the Russo-Japanese War. In 1907, a balloon corps was organized in the Telegraph Corps at Nakano, and, in June, 1909, a special military balloon investigation association was established. In March, 1910, a gliding test of aeroplane No. 1 of the Hino type was made at Toyamagahara, Tokyo, and, in October that year, a flying test of an aeroplane of the Narahara type was made. On December 19 of the same year, Lieutenant Tokugawa (now Lieutenant-General) flew 3,000 metres in four minutes in a Farman aeroplane at Yoyogi, and Captain Hino flew in a Gladys aeroplane. This was the first time that an aeroplane flight was carried out in Japan.

The First Civilian Flight In the spring of 1911, airship No. 2 of the Yamada type was taken out of the hangar at Osaka, Tokyo, and made a successful cross-country flight. In March and April of the same year, an American flyer carried out an exhibition flight in Osaka and Tokyo; on April 8, Mr. Shizuo Morita, who had studied flying in France, flew in a 45 h.p. monoplane over the Joto parade-ground in Osaka, this being the first flight by a civilian flyer in this country; and, in April that year, the aerodrome and flying ground at Tokorozawa were completed. In June, 1912, Mr. Atwater, an American flyer, conducted a series of exhibition flights by hydroplane on the sea off Nishinomiyama near Osaka; and, in July that year, five officers were selected from each army division to be trained as flying officers. This marks the beginning of instruction in flying to military officers in this country. In the autumn of 1912, a number of aeroplanes and airships participated in the grand military manoeuvres. In February, 1913, the Teikoku Hiko Kyokai (Imperial Aeronautical Association) was established; on May 4 that year, Mr. Koha Takéishi, a civilian flyer, started on a Naruo-Osaka-Kyoto flight, but, when landing in the Fukakusa parade-ground in Kyoto, he met with disaster and died as the first victim of civilian aviation in Japan.

Contest of Civilian Aviators In 1914, a contest by civilian aviators was held at Naruo, near Osaka, under the auspices of the Imperial Aeronautical Association, and, during the Tsingtao campaign Japanese military aeroplanes took

part in actual fighting for the first time and displayed their ability in scouting, in bombing the enemy fortress and in an aerial combat with enemy planes. In 1915, a meet of civilian flyers was held in Osaka, and a military flying battalion was formed. Between January and April, 1916, American aviators visited Japan and performed trick flying at Naruo and other places; and, on April 27 that year, night flying was successfully carried out for the first time in this country. In 1917, the flying battalion was enlarged into the first and second battalions and a balloon corps. In April that year, Mr. Art Smith, an American flyer, again visited Japan and carried out a series of high-class exhibition flights in Osaka and Tokyo. In April, 1918, Mr. Masao Goto, a private flyer, succeeded in making a non-stop flight between Tokorozawa and Osaka for the first time.

Military Flying School In April, 1919, the Military Aeronautical Department and the Military Flying School were established; and, on October 22 that year, the first mail transport flight between Tokyo and Osaka was carried out with success. In 1920, the Aeronautical Institute was established at Takishima, Tokyo; and in May that year, two Italian aviators paid a visit to Japan by air. In March, 1921, the regulations for the control of aviation were put in force. In the autumn of 1922, the Japan Aerial Transport Institute started a regular flying service between Sakai and Shikoku by hydroplanes. In 1923, the military air force was made an independent arm. The Osaka Asahi Shimbun started a regular air service between Tokyo and Osaka in January and the Japan Aerial Navigation Co., Ltd., opened one between Osaka and Beppu in July that year. In March, 1924, the dirigible S. S. No. 3 exploded and, in September of that year, the trial flight of the newly built airship Astra was carried out.

Air Mail Traffic In April, 1925, air mail traffic was started between Tokyo and Osaka; and, on July 25 that year, an aeroplane of the Asahi Shimbun took off from the Yoyogi parade-ground in Tokyo and, on October 27, reached Rome after a flight of 16,000 kilometres (in stages) via Moscow, Paris and London. In 1926, the Japanese Navy purchased from Italy the dirigible S. No. 3 which was one with a semi-rigid envelope, introduced into Japan for the first time. In June, 1927, the Aviation Law came into effect. In May, the Coast Defence Association successfully

carried out a flight round the mainland, and, in October that year, the airship S. No. 3 exploded, while participating in the grand naval manoeuvres. In April, 1928, Mr. Habuto, a civilian aviator, established a new record by flying 2,000 kilometres in 13 hours and 23 minutes; and, in July that year, aerial defence manoeuvres were conducted in Osaka.

The Air Transport Co. In 1929, the Japan Air Transport Co., Ltd., was established and inaugurated a regular air passenger service between Tokyo, Osaka and Fukuoka, later extending it to Seoul and Dairen; and two Army scouting planes of the 88 type flew between Tachiarai and Haino without stopping, making a record of aerial connection between the mainland and Taiwan. On their homeward flight, one of the planes flew for 15 hours and 15 minutes, thus establishing a new record of staying in the air in this country. In 1930, the Japan Students' Aviation League was formed and associations for the study of aviation were established one after another in different universities and colleges in Tokyo and Osaka. Mr. Yoshihara, a civilian flyer, flew from Berlin to Tokyo via Siberia in 11 days and simultaneously, Mr. Azuma, also a civilian flyer, reached Tokyo from Los Angeles via New York, London, Berlin and Siberia. In March, 1931, the airship No. 8 which had been made in Japan and belonged to the naval air force at Kasumigaura took off and stayed in the air for a record length of time of 60 hours and one minute.

The Aeronautical Institute In May, the Aeronautical Institute which ranks as the best research station in the world was completed six years after the starting of its construction. In the same month, the aeroplane "Young Japan" belonging to Hosei University, a member of the Students' Aviation League, set off for Europe from the flying ground at Haneda near Tokyo and, at the end of August, reached its destination, Rome. After the outbreak of the Manchurian trouble in September that year, our military planes participated in actual warfare for the first time since the Tsingtao campaign. In October of the same year, the aeroplane (Fokker No. 3-M) of the Japan Air Transport Company succeeded in flying between Taiwan and the mainland. In 1932, as a consequence of the Manchurian trouble, 64 "Aikoku" (Patriotic) planes were constructed with money contributed by the people generally, and, moreover, defence from

serial attack became much discussed in our principal cities and important economic centres.

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tion to service the company has contributed a great deal to the development of civil aviation in Japan. However, the results have not proved satisfactory, especially with recent years.

Measures to Promote the Aviation Service

Profoundly convinced of the absolute necessity of promoting aviation service under existing conditions the Ministry of Communications intends to make it a national policy to launch a comprehensive aviation programme extending over three years beginning with the fiscal year of 1937-38. This programme covers the perfection and expansion of aviation facilities, training of aviators, encouragement and control of aircraft industry, perfection of both national and international aviation systems, etc.

Perfection and Expansion of Aviation Facilities The aviation facilities of this nation, including aerodromes, grounds for forced landing, aeronautical wireless stations, aerial lighthouses and aviation meteorological observatories, are in such condition that they are far from bearing a favourable comparison with those in various other countries. There are at present less than 10 state-managed flying grounds for civilian aeroplanes in this country, which are all too small and poorly equipped. Even the Tokyo airport, in spite of its being located at the entrance to the capital, is not large enough to enable the easy landing of a large-sized passenger plane such as the Douglas machine which traverses the American Continent.

As a means of rectifying the unsatisfactory situation, the authorities of the Ministry of Communications are endeavouring to perfect the national aviation system through the improvement of existing aviation fields and establishment of new ones in the leading cities throughout the country with the co-operation of the prefectures concerned. They are also making efforts to increase the number of grounds for forced landing and improve and expand the aerial lighthouses and other facilities in order to promote the regular air service.

Training of Aviators While the necessity of training air pilots and aircraft mechanics in order to promote the aviation service is generally recognized, the institutes for such training in this country are still very poorly organized and have few adequate training grounds. To make matters worse, the aeroplanes used by these institutes for exercise purposes are generally of a very inferior quality.

The communications authorities are working for an increase in the number of superior aviators by controlling these training institutes and urging an improvement of their equipments.

Encouragement and Control of the Aircraft Industry From the standpoint of science and technique, the Japanese people are not inferior to any other in producing aircraft of superior order but owing to the smallness of demand for civilian aeroplanes, few efforts have been made to manufacture flying machines of new types. Though some new types have been produced in the country they are chiefly imitations of foreign-made ones. The expensiveness of the production of an original type is held responsible for the slowness in the progress of aircraft industry in the nation. The government authorities are considering measures to encourage the manufacture of experimental aircraft, besides undertaking to direct the aircraft-making activities through its aeronautical research institutes. They aim at enabling the manufacture of aircraft at less cost than at present, so as to increase the demand for aeroplanes. The authorities also deem it essential to control as well as give encouragement to the manufacturers of aeroplanes and makers of aeroplane parts. The leading newspaper publishers in the country are encouraged by means of special grants to buy home-made aeroplanes instead of imported machines for use in their business. As an additional means of encouraging aircraft industry, the authorities also feel the necessity of granting subventions for the promotion of the export trade of home-made aircraft.

International Aviation Besides perfecting the national aviation system by improving the existing facilities and creating new ones, it is being strongly urged that the air routes linking this land with other countries should be perfected and expanded. It is emphasized that this country should gain the mastery of a regular air line connecting Manchoukuo, China and Europe, another connecting India, the South Sea Islands and Australia, a third connecting Soviet Russia and a fourth connecting the United States of America. Though the difficulty of competing with the already extended influence in the East of America and Europe is conceded, yet such a mastery is deemed essential to the growth of this nation.

Promotion of the Aircraft Industry With a view to furthering the development of the aircraft industry of the country, the government authorities are

devising adequate ways and means to encourage the use of aircraft for searching out schools of fish to help fishing industry, to take aerial pictures and conduct aerial surveys, in addition to promoting the regular air transport business. Measures are also under consideration for encouraging the establishment of light aeroplane clubs, glider clubs and similar civilian aviation organizations, as well as for increasing facilities for training in aviation.

Organizations connected with Aviation

The Aviation Council This body is under the direct control of the Minister of Education and returns reports on matters submitted by him; it also deliberates on important matters concerning the study of the basic theories of flying-machines and makes recommendations to the Cabinet Ministers concerned. It is composed of a president and 20 councillors, and, in case of particular need, councillors ad interim are appointed. The councillors are the Vice-Ministers of the Departments of War, Marine, Education, and Communications, as well as those who have deep knowledge and wide experience, while the councillors ad interim are selected from among scholars and experts.

The Imperial Aeronautical Association The Imperial Aeronautical Association was established in 1913 with the object of encouraging and protecting the development of science and art pertaining to aviation and of flying machines and their parts and accessories as well as diffusing knowledge of, and cultivating taste for, aerial flight among the people. A sum of ¥500,000 granted from the Privy Purse was made a foundation-fund, and, with interest accruing from it and with receipts from dues paid by its members (¥2.00 per member), the Association carries on its undertaking, the principal items of which are presenting persons who fall victims to aviation and accidents connected thereto with condolence money, awarding bounties to persons connected with aviation, and giving lectures, cinema

shows, and exhibitions concerning aviation. It also publishes a monthly journal containing aviation news at home and abroad. It has an Imperial Prince as patron and a board of directors of 30 members, including a president, two vice-presidents, and a managing-director. In addition, it has five auditors and over 105 councillors, from whom directors are elected. Its offices are located at No. 7, Sakurada Hongochi, Shiba-ku, Tokyo.

The International Aviation Commission This Commission is a permanent body formed in accordance with the provisions of the Treaty relating to Aviation, and makes or receives proposals bearing on alterations and modifications of the provisions of the treaty to and from the signatory Powers, and reports to them such alterations and modifications as are adopted.

The International Aviation Federation This Federation consists of various corporations relating to aviation in different countries and chiefly aims at the progress of civil aviation through mutual consultation and also the promotion of mutual facilities. Besides, it undertakes recognition of world flying records. The Imperial Aeronautical Association represents Japan in the Federation.

The Aeronautical Institute The Aeronautical Institute was first established at Etchujima in Tokyo in April, 1918 by taking over the business of the Commission on Investigation of Aeronautics organized in the Tokyo Imperial University in April, 1916, with the object of making researches in aeroplanes, airships, balloons, motors, aviation psychology and other matters concerning aviation. Subsequently, in the earthquake and fire of 1923, the institute was destroyed and was newly constructed at Komaba in the grounds of the Department of Agriculture of Tokyo Imperial University in 1927. It is divided into the departments of air pockets, aeroplanes, physics, chemistry, metallurgy and material, and ranks first in the world in point of equipment.

CHAPTER XXVI

SEA TRANSPORTATION

Historical Background

The dawn of Japan's history is associated with maritime activities. The national mythology is rich in stories of sea adventures. Later authentic records fully demonstrate the energy and spirit of the early Japanese, who had to fight their way through stormy seas in the primitive craft of those days. The period covered by the latter half of the sixteenth and the beginning of the seventeenth century marks the golden age of marine activity in Old Japan. This was in a great measure due to the stimulus received by the natives through the appearance of Portuguese and other foreign ships in Japanese waters. Japanese vessels not only were in evidence in South China and the South Sea Islands, but cruised the Pacific as far as Mexico and fought their way through the Indian Ocean and round the Cape of Good Hope to Europe. Military rulers encouraged maritime enterprises and many large vessels were built. Thus the shipping trade between Japan and the South Seas and India, carried on under letters patent and numbering no less than two hundred ships at one time, engaged in commerce with twenty different countries, which were eventually dotted with regular Japanese colonies.

Ban on Shipping Activities Unfortunately, while the maritime prosperity of Japan was thus making progress by leaps and bounds, the Tokugawa Shogunate took the drastic measure of secluding the country and forbidding all foreign intercourse. Its first act was to place a strict ban on the propagation of Christianity in 1613. Subsequently, in 1634, all commercial relations with foreign countries were stopped, and in 1636 the construction of large ocean-going vessels was forbidden. For a period of more than two centuries thereafter the ocean trade of Japan was forcibly suspended.

The Well-timed Visit Commodore Perry's visit in 1853 was opportune, inasmuch as by this time many Japanese amongst the intelligent classes were dimly aware of conditions outside Japan, and the Shogun's Government, amid much confusion of opinion, took a firm

step and signed the treaty. This event was followed in 1854 by the conclusion of similar treaties with the leading nations of Europe. Commercial intercourse with foreign countries was thus resumed, and the time-worn restrictions on navigation and ship-building were withdrawn. Then was formed the nucleus of the present mercantile marine of Japan. The Shogun's Government, finding the old Japanese methods of ship-building and navigation utterly out-of-date, promptly decided upon introducing the ideas of the outside world. For this purpose, students were sent abroad, while foreign experts were engaged to work in Japan. A ship-building yard was established in Yokosuka, and a naval school in Nagasaki.

After the Meiji Restoration

The First Steamship Co. In the third year of Meiji the Government promulgated the Mercantile Marine Regulations. In the same year, the pioneer steamship concern was inaugurated and a new leaf in the history of the Japanese mercantile marine was turned. The first company to be incorporated was the Kwatso Kaisha, or Forwarding and Transport Company, which was later re-named the Teikoku Yusen Joki Kaisha (Imperial Mail Steamship Co.). Mameji Kimura was one of the chief promoters. A regular service was maintained between Tokyo and Yokohama and between Osaka and Kobe. Yataro Iwasaki, founder of the Mitsubishi interests, incorporated a shipping company called the Tsukumo Shokai, later re-named the Mitsubishi Shokai, in 1870 and inaugurated a regular passenger service between Tokyo and Kochi in Shikoku, from which place Iwasaki hailed. Three steamers formerly owned by Lord Yamanouchi, former feudal lord of Tosa, were employed in the service. When the Japanese Government sent a punitive force against Formosa in 1874, all foreign steamship companies interested in the Far Eastern shipping trade declared neutrality and rejected the Government's offer to charter their ships. Perplexed at this, the Government ordered the Mitsubishi Shokai and Teikoku Joki to offer their ships, and thus the transportation of troops was

smoothly effected.

The N. Y. K. Comes into Existence Gageobu Okuma, then Minister of Finance, and Toshimichi Okubo, then Home Minister, made efforts to organize the Yubin Kisen Mitsubishi Kaisha after the termination of the expedition. The two above-mentioned firms were dissolved and the Government's ships were handed over to the new company. The Mitsubishi interests made large profits under Government protection. Kaoru Inouye and Admiral Tsugumichi Saigo, who were Okuma's political opponents, organized a corporation to rival the Mitsubishi's as a means of overthrowing Okuma and ordered, in 1882, Eitichi Shibusawa, Takashi Masuda and others to form a semi-Government shipping company under the name of the Kyodo Unyu Kaisha. Keen competition later ensued between the two and threatened to lead them to ruin. Consequently, the Government ordered them to effect a merger. In 1885 the Nippon Yusen Kaisha was incorporated through the investment of ¥5,000,000 by the Mitsubishi and ¥6,000,000 by the Kyodo Unyu. At the time of founding, the company owned 58 steamers with an aggregate of 68,700 tons. The Pacific Mail Steamship Company of America was then operating a regular line between Yokohama and Shanghai with the s. s. Golden Age, the Costa Rica and two other ships, all of which were purchased by the Japanese Government in 1874 for the transportation of Japanese soldiers on the expedition to Formosa. Iwasaki waged a freight war with the Pacific Mail at that time and finally purchased these four ships for \$8,000,000. This price included the Shanghai wharf now owned by the Nippon Yusen Kaisha at Whampoo.

The O. S. K. About this time the Osaka Shosen Kaisha was established in Osaka. It was then a small concern maintaining services in the Inland Sea of Japan, but later developed into a large company. The Nippon Yusen Kaisha, while maintaining the services originally inaugurated by its predecessors, opened new lines to Korea and North China, and one between Shanghai and Vladivostok; and in 1891, it inaugurated the service between Kobe and Manila and commenced to despatch occasional ships to Australia. In 1892, the N. Y. K. Japan-Bombay service was opened. The first regular Japanese steamship connection with a far-away foreign country. The rapid progress of Japanese shipping is attested by the fact that in the beginning of 1891 the total tonnage owned in Japan was 100-

000, and one year later this figure had increased by 10,000.

The Sino-Japanese War During the Sino-Japanese War of 1894-5, when the greater part of Japanese shipping space was requisitioned for transport purposes, a large number of steamers were purchased or chartered by Japanese owners and Japan, having complete command of the sea, was able to maintain its established oversea services. At the close of the war Japan found that its merchant marine had grown by 100 per cent compared with the pre-war figures. Meanwhile the Nippon Yusen Kaisha lost no time in consolidating its established lines and in 1896 it inaugurated three trunk lines, viz., the Yokohama-London-Antwerp line, the Hongkong-Japan-Seattle line and the Yokohama-Manila-Australia line. In 1898 the Tokyo Kisen Kaisha was established, and it maintained a regular fast service between Hongkong and San Francisco via Japanese ports with three fine new passenger ships. The Osaka Shosen Kaisha opened a new line on the Yangtze-kiang in 1898. In the following year, this company opened a line from Formosa to Hongkong, via Amoy and Swatow. The increase in Japanese tonnage at that time was remarkable. Whereas, at the end of 1897, it amounted to only 270,000 tons, it suddenly increased at the end of 1898 to 477,000 tons, the ratio of growth continuing, until the gross tonnage of steamers of 1,000 tons and over at the end of 1903 amounted to 521,000.

Foreigners' Services Mention must not be omitted of the valuable contribution made by foreign experts to the development of the Japanese mercantile marine. Through the remarkable foresight of Iwasaki, not only foreign captains, officers, engineers and pursers were freely engaged afloat, but numerous experts, business and technical, were employed on shore to conduct the business of the Nippon Yusen Kaisha. A large number of these foreigners remained in the company's service for a considerable time after its formation. Foremost among them were A. R. Brown, Alexander Macmillan, T. H. James, J. W. Ekstrand, W. H. Hasewell and Hector Frazer, whose names are still familiar to old timers in the Far Eastern shipping trade.

One noteworthy fact in connection with the development of the shipping business is the advance made by Japanese mariners. Japan imported the science of navigation from the West and early in the Meiji Era the captains, chief engineers and mates were mostly

foreigners. When the Nippon Yusen Kaisha was first organized in 1884 the company owned 57 steamers with a total tonnage of 60,000 and employed about 174 foreigners, the number being increased to 224 during the Sino-Japanese War. During the Russo-Japanese War Japanese mariners were the recipients of much praise, and their credit was greatly raised. After the war, in 1907, the number of foreigners was reduced to 87 and by 1920 there was not a single foreign officer in a Japanese ship.

The Russo-Japanese War The Russo-Japanese War broke out early in 1904, and Japan found herself compelled to undertake transport work of the biggest magnitude ever known in her history. This situation naturally created the necessity of purchasing additional tonnage, with the result that at the end of 1906 the total merchant marine reached a little more than one million gross tons, and Japan thus ranked sixth among the great maritime Powers of the world. Through the expansion of trade after the war, sufficient employment was found for these steamers. The Tokyo Kisen Kaisha opened its South American service before the war terminated. The Osaka Shosen Kaisha started in 1909 its Far East-Puget Sound service. Elsewhere the expansion was also pronounced, for in 1907 four large Japanese companies trading on the Yangtze-kiang pooled their interests and formed the Nisshin Kisen Kaisha (Japan-China Steamship Company) and the Osaka Shosen Kaisha in the meantime inaugurated the Tsuruga-Vladivostok and the Osaka-Kobé-Moji-Dairen lines. The general slump in the shipping trade which prevailed all over the world during this period was felt in Japan, but the country was not so badly hit as to prevent the further growth of its shipping, for, at the end of the year when the World War broke out, the total gross tonnage of ships flying the Japanese flag was 1,590,000, of which 1,310,000 tons represented ships of more than 1,000 gross tons each. Turning to the share which Japanese merchant shipping contributed to its foreign commerce, it was found that, whereas, prior to the Sino-Japanese war (1894-5), only 10 per cent of imports and exports were carried by Japanese ships, the proportion increased to 40 per cent after the Russo-Japanese War (1904-5), and just before the commencement of the World War, it had grown to 48 per cent.

The World War An extensive dearth of tonnage and the consequent pressing

demand for space all over the world, caused by the World War, created a unique situation for Japanese merchant shipping, so much so that the total gross tonnage suddenly swelled by a million tons within a brief period and the yearly shipbuilding capacity increased from 50,000 tons to a half million gross tons. The share contributed by Japanese vessels to the transportation of imports and exports increased to nearly 80 per cent, the remaining 20 per cent being carried by foreign ships. Many new shipping services to all corners of the globe were opened one after another, and, besides rendering distinguished service to the cause of the Allies, the Japanese mercantile marine maintained a regular fortnightly Japan-England mail service, and despatched extra ships to European waters during the war. Furthermore, in response to the call of the United States after that country participated in the War a group of Japanese shipowners delivered a number of steamers aggregating 150,000 tons to the United States Government on charter at rates considerably lower than those which shipowners at that time could have obtained in the open market.

The inevitable aftermath of the war abnormalities—shipping depression—set in early in 1920, and this is still being felt all over the world. Japanese shipping in common with that of all other nations is undergoing a severe test of its perseverance and fortitude. Despite this Japanese shipping has considerably increased. The Tokyo Kisen Kaisha transferred all of its Pacific ships to the Nippon Yusen Kaisha, by which the latter became one of the greatest shipping companies of the world.

Representative Shipping Companies There are nine steamship companies working overseas and domestic services under governmental subsidy. These concerns are the Nippon Yusen Kaisha, the Osaka Shosen Kaisha, the Nisshin Kisen Kaisha, the Nanyo Kaiun Kaisha, the Kinkai Yusen Kaisha, the Yamashita Kisen Kaisha, the Kita Nippon Kisen Kaisha, the Harada Kisen Kaisha and the Kuribayashi Shosen Kaisha. The subsidy is paid to these companies for a period of one year from April to March in most cases, while in certain cases the subsidy runs over a period of three years.

The N.Y.K. Yokohama-London service has Kobé, Shanghai, Hongkong, Singapore, Colombo, Suez, Port Said and Marseilles as intermediate ports of call. Its San Francisco line has Honolulu as the only intermediate port of

call on both outward and homeward (eastward-bound) trips. On the westward-bound trip it has Nagasaki, Shanghai, and Hongkong. The company's Yokohama-Seattle (eastward-bound) service has Victoria or Vancouver as ports of call and its westward-bound service has Kobé, Moji and Shanghai as ports of call. Its South American West Coast line between Yokohama and Valparaiso (eastward-bound) has Hobehti, Manzanillo, or Salina Cruz, Callao and Iquique as ports of call and its westward-bound line has as ports of call Kobé, Moji and Hongkong. The N.Y.K. Yokohama-Melbourne service has as ports of call Kobé, Nagasaki, Hongkong, Manila, Davao, Thursday Island, Brisbane and Sydney both ways. The company had, in April 1930, 90 vessels with an aggregate tonnage of 657,000 tons. The number of ships under construction and proposed was 20 with 214,500 tons; it is capitalized at ¥2,250,000 paid up and the rate of profit was 32.7 and rate of dividend 7.0 for the second half of 1937.

The O. S. K. South American East Coast line (Yokohama-Buenos Aires) for its outward bound trip has as ports of call Kobé, Nagasaki, Hongkong, Singapore, Cape Town, Rio de Janeiro and Santos. When homeward bound the line has Santos, Rio de Janeiro and Cristobal as ports of call. The O. S. K. African East Coast line operates between Kobé and Cape Town and on its outward bound trip has Moji, Hongkong, Singapore, Colombo, Mombasa, Zanzibar, Dar-Es-Salaam, Beira, Loureço Marques and Durban. When homeward bound the line has Durban, Loureço Marques, Mombasa, Zanzibar, Singapore and Moji as ports of call. These are the most important steamship lines operated under Government subsidy. The company owned, in April 1930, 120 vessels with 534,000 tons. It is capitalized at ¥62,500,000 paid up and the rate of profit for the second half of 1937 was 49.5 and that of dividend 6.0.

The Kokusai Kisen Kaisha, owner of motor and steam vessels aggregating 250,000 tons deadweight, has reached new heights of prosperity under the able management of Mr. S. Kurokawa, President, the net profit for the year ending December 31, 1937, having amounted to over ¥11,530,000. During the last few years nine speedy motor vessels have been built and placed in commission on the Orient-New York express service, whilst three 19-knotters were completed early in 1936. The latter have been allocated to the newly inaugurated Far East-North Europe fast service.

Furthermore, three motor and turbine super-freighters of about 9,200 tons deadweight each are now on order with the shipbuilders here in Japan and will all be completed before the end of the year 1938. The Kokusai Line, which was mainly engaged in tramp shipping before, now maintains several regular services of international significance, thus contributing much towards Japan's balance of foreign payments, which fact is worthy of particular mention at this moment when the importance of invisible exports cannot be too heavily stressed.

In addition, the Nanyo Kaiun Kaisha operates under Government subsidy the South Sea line between Kobé and Sourabaya, Java, calling at Macassar, Sourabaya, Samarang and Batavia on the outward trip. Ships sail direct for Kobé on the homeward trip. The Nisshin Kisen Kaisha operates the China Coast line between Shanghai and Canton as the southern line and between Shanghai and Tientsin or Taku as the northern line. The company also maintains the Shanghai-Hankow line with Chenkiang and Nanking as ports of call, the Hankow-Ichang line with Shasi as port of call, the Hankow-Hsiangtan line with Changsha as port of call, Hankow-Changteh line, and the Ichang-Chungching line, all these five lines being known as the Yangtze River services.

The Kinkai Yusen Kaisha, affiliated with the Nippon Yusen Kaisha, operates a subsidized regular service between Kobé and Tientsin or Taku during the winter with Moji as port of call and also the Yokohama-Newchwang (Yingkow) service with Nagoya as port of call both under Government subsidy. It also runs a regular service between Hakodate and Odomari in Karafuto. The N. Y. K., O.S.K. and Harada Kisen Kaisha jointly maintain a Kobé-Tsingtao regular steamer service. The Tsuruga-Vladivostok regular service is operated by the Kita Nippon Kisen Kaisha, which is affiliated with the Osaka Shosen Kaisha. The Kuribayashi Shosen Kaisha, Hokkaido, operates a regular service between Hakodate and Petropavlovsk in Kamchatka seven times a year during the warm season. Stores and other supplies of daily necessity are carried by ships on the service for Japanese fishermen engaged in the Kamchatka fisheries. A regular connecting service between Aomori and Muroran is maintained by the Kita Nippon.

Nippon Yusen Kaisha regular liners sailing between Japan and Europe call on their outward trips at Istanbul and Beirut more than twice every three

month), those sailing between the same places call on their outward and homeward trips at Piraeus more than twice every three months, and those sailing between Japan and the United States call on their homeward trips at Havana in Cuba once every two months, all under Government subsidy.

The Toyo Kisen Kaisha owned 15 vessels with 78,700 tons in April 1937, with paid-up capital ¥9,000,000, rate of profit for the second half of 1937, 32.7 and that of dividend 7.0. The total tonnage of ships under its control reached 121,277 tons.

The Dairen Kisen Kaisha had 52 vessels with 200,000 tons (9 vessels under construction), in April 1938, with paid-up capital ¥14,450,000, rate of profit for the first half of 1937 was 43.1 and that of dividend 6.0.

The Kuribayashi Shosen Kaisha had 22 vessels with 77,000 tons in April 1938.

Among smaller companies, the Daido Kaikan Kaisha (United Ocean Transport Co.) had 8 vessels with 77,956 tons.

Open Ports The open ports in Japan proper are Yokohama, Kobe, Niigata, Ebusu, Osaka, Nagasaki, Hakodate, Shimizu, Taketoyo, Nagoya, Yokkaichi, Uno, Onomichi-Itozaki, Tokuyama, Imabari, Shimonoseki, Hagi, Moji, Wakamatsu, Hakata, Karatsu, Suminoe, Kutchinotsu, Misaki, Misumi, Kagoshima, Izuhara, Naha, Hamada, Sakai, Miyazu, Tsuruga, Naha, Fushiki, Funakawa, Aomori, Otaru, Nemuro, Kushiro, Muroran, Sasuna, Shiohimi, Misaki, Shioyama and Kamishi.

Marine Transportation in 1937

The shipping industry in this country witnessed remarkable developments during 1937. The shipping companies imposed upon themselves a voluntary control to curb the soaring shipping rates in connection with what was considered to be the greatest shipping boom since the time of the Great War and later an emergency shipping control law was passed bringing the shipping industry under Government control on account of the outbreak of the China incident. In this respect, it may be noted that the shipping circles in Japan began to recover from the post-war depression as early as 1932 or thereabouts owing to various factors such as the adjustment of surplus bottoms effected on the strength of the facilities for promoting the improvement of the quality of ships, the improvement in the profit situation brought about by the determination of freight rates on the basis of foreign currencies following the depreciation of

the yen, and the increase in the volume of freights arising from the expansion of the foreign trade of this country. With the advent of the year 1937, the boom of the shipping circles in Japan was further stimulated by the improvement in the business conditions of the world's shipping circles as a whole.

Thus, freight and charter rates and the price of ships commenced showing a remarkable upward tendency at the beginning of 1937 and there were indications that such a shipping boom as prevailed during the Great War might appear again. The abnormal rise in the freight rates and the shortage of bottoms were said to be responsible for the higher prices of commodities and for the difficulties attending the importation of materials to feed the key industries. Under the circumstances there were indications that the Government might institute some measures of control over shipping should the situation become worse. In order to avoid this possibility, the Nippon Yusen Kaisha and the Osaka Shosen Kaisha and five other leading shipping concerns in the country formed an Autonomous Shipping Federation in July for the double purpose of restraining the rising shipping charges for the smooth transportation of important commodities and making provision against any depression in the future.

Nevertheless, the North China incident which broke out on July 7 gave rise to entirely unexpected conditions and the shipping concerns began to show signs of an unusual strain. The increased demand for bottoms brought about directly by the incident aggravated the already-felt shortage of shipping space, thus serving to stimulate the rising tendency of freight rates and charterage. As an emergency measure to deal with the situation, the Ministry of Communications adopted a policy of licensing vessels registered in the Kwantung Leased Territory and foreign vessels in general to participate in the coastwise trade of Japan proper. Simultaneously, the Autonomous Shipping Federation fixed standard freight rates and charterage. These measures eased the tense situation facing the shipping trade. In order to provide against any prolongation of the extraordinary situation, the Ministry of Communications then decided to effect a fundamental remedy through the enactment of a temporary shipping control law. A bill for the law was approved at the 72nd session of the Imperial Diet and thus the ship-

ping concerns were brought under wartime control in common with other industrial concerns in the country.

Up to the time of writing, the control of the shipping circles had been left in the charge of the Autonomous Shipping Federation and the newly-enacted Emergency Shipping Control Law had not been invoked. The conditions of the coastwise service were still showing a firm tone due to a shortage of bottoms while both regular liners and tramps assigned to overseas routes were suffering from a decrease in freights on account of the strengthened exchange control and the restriction of imports. The questions that remained to be settled were how a satisfactory operation of shipping could be effected by the Autonomous Shipping Federation in case of the prolongation of the China incident beyond the expected duration, how the shipping circles might be able to provide against the inevitable downward reaction that would set in the shipping business with the return to normal service of a tremendous amount of tonnage after the termination of the China incident and as a result of the anticipated continuance of the downward trend of imports into the country, and how the shipping rights along the China coast might be settled after the termination of the incident.

The time had been ripening for the commencement of negotiations between Japan and Great Britain for an adjustment of the shipping relations between the two countries but the outbreak of the China incident caused the plan for such negotiations to be postponed indefinitely.

Shipping Market The advance of large-size vessels of this country to foreign routes on account of world-wide improvement in the conditions of shipping business, coupled with a shortage of bottoms in the coastwise service due to the increased movements of freight vessels brought about by the activity of the munitions industry, sent the freight rates soaring. During and around May, the rates for transportation of coal from Wakamatsu to Yokohama stood at ¥4.20 a ton, a rate which is higher than that which prevailed at the time of the Great Earthquake and Fire of 1923 in the Kanto district. Toward the end of the first half of the year, the shipping market showed a

rather weak tone as the large-size vessels assigned to foreign routes returned home with considerably decreased freights and the movements of freight vessels became less active but a fresh impetus was imparted by the outbreak of the North China incident.

The incident gave rise to an increasing demand for bottoms, which in turn brought about a rising tendency of freight rates although the prospects of the shipping market were difficult to foresee under the prevailing conditions. The Autonomous Shipping Federation, however, decided upon standard freight rates. The freight rates for coal, for instance, from Wakamatsu to Yokohama or from Muroran to Yokohama were fixed at ¥5 per ton. Later the number of new commercial transactions decreased and the demand for shipping space showed a sign of depression with the result that the conditions of the shipping market even manifested a weak tone for a time, with the freight rates threatening to fall below the standard level determined by the Autonomous Shipping Federation.

From the latter part of October, there were the seasonal active movements of coal and other commodities and movements of freights toward North China also reappeared as the situation in that area gradually returned to normal. This, coupled with the increased demand for bottoms for the transportation of munitions or munitions materials, restored the firm tone in the shipping rates and the Wakamatsu-Yokohama coal rate rose to ¥5.30.

The conditions of freight rates on lines linking this country with the South Sea Islands and the Pacific coast of the United States and its Atlantic coast showed a firm tone during the first half of 1937 on account of active movements of freights. The strengthened control over foreign exchange and restriction of imports in the latter half of the year, however, caused the movements of freights to become less active and accordingly the shipping market fell into a state of stagnation.

Further details of the changes which occurred in the freight rates on principal commodities charged by coasters and ocean-going vessels are shown in the following table which is based on a survey conducted by the Nippon Kaikan Shukaisho (Japan Shipowners' Club):

PRINCIPAL RATES CHARGED BY COASTERS AND OCEAN-GOING VESSELS

	Wakamatsu-Tokyo or Yokohama (on coal)		Karafuto-Shibaura (on lumber)		Dairen-Europe (on soya beans)		Plate-Europe (on cereals)		Pacific Coast of U.S.-Japan (on logs)	
	High-est (In yen)	Low-est	High-est (In yen)	Low-est	High-est (In shillings)	Low-est	High-est (In shillings)	Low-est	High-est (In dollars)	Low-est
January, 1937	2.35	2.10	170	150	42.6	40.0	35.6	27.6	11.50	10.50
February ..	2.45	2.30	200	200	37.6	35.0	27.6	26.6	13.00	11.50
March ..	3.50	2.45	300	220	42.6	37.6	28.6	27.9	21.00	13.00
April ..	4.20	3.50	400	300	45.0	40.0	35.0	27.9	23.50	20.00
May ..	4.20	4.10	400	400	45.0	41.3	35.3	32.0	23.50	23.00
June ..	4.20	4.10	400	380	41.3	38.9	36.3	30.0	23.00	22.00
July ..	4.60	4.00	450	360	42.6	37.6	35.6	30.6	22.00	21.00
August ..	5.00	4.70	400	380	46.6	42.6	33.6	31.0	21.00	21.00
September ..	5.00	4.80	450	400	50.0	47.0	37.6	33.6	21.00	21.00
October ..	4.90	4.40	400	380	48.0	42.6	37.6	30.0	21.00	21.00
November ..	5.30	5.00	—	—	40.0	39.0	30.0	26.3	21.00	21.00
1937	5.30	2.10	450	150	50.0	35.0	37.6	26.3	23.50	10.50
1936	2.60	1.60	200	115	41.3	20.0	32.6	17.6	10.50	8.50

The above figures denote the freight rates charged by tramps. The freight rates charged by regular liners, too, rose from 10 to 20 or 30 per cent between the latter part of 1936 and the middle of 1937. The rates on raw cot-

ton, wool, sugar and other important commodities were also raised in many cases. The rise in the rates for the principal lines, which was decided during 1937, is shown in the following tables:

1. Rise in Freight Rates on Shipments from Japan

Destinations	Date of Enforcement of Higher Rates		Average Percentage of Rise
United States (Pacific coast and Atlantic coast)	June	16, 1937	about 15%
Europe	May	19, 1937	5 to 10%
Australia	June	1, 1937	10 to 20%
Bangkok	May	1, 1937	about 15%
"	February	1, 1938	about 15%
Bombay, Calcutta	March	28, 1937	about 10%
Java (third rise)	August	1, 1937	10 to 15%
Philippines	May	1, 1937	about 15%
"	January	1, 1938	about 12%
Hongkong	May	15, 1937	about 15%
"	October	1, 1936	10 to 15%
Shanghai	June	1, 1937	about 10%
Singapore	May,	25, 1937	about 10%
"	October	1, 1937	about 10 to 15%

2. Rise in Freight Rates on Shipments to Japan

From	Date of Enforcement of Higher Rates		Average Percentage of Rise
New York	April	15, 1937	about 15%
Australia	June	1, 1937	about 10%
New Zealand	June	1, 1937	5 to 10%
Shanghai	June	1, 1937	about 20%
Bombay, Calcutta	April	1, 1937	about 10%
"	October	1, 1937	about 10 to 15%
Singapore	June	1, 1937	about 10%
United States (Atlantic coast)	April	15, 1937	about 15%
United States (Pacific coast)	April	1, 1937	minimum of 20%
Manila	May	1, 1937	minimum of 10%

Charter rates also continued to rise rapidly until May or thereabouts when ¥7.50 to ¥8.00 became the regular charge for all sizes of ships. Following the outbreak of the China incident, charter rates moved around ¥7.50 for large-size ships on the basis of the standard rates fixed by the Autonomous Shipping Federation and contracts were of short term in view of the difficulty of foreseeing what was ahead. Toward the end of the year, however, the rates slackened, reflecting the stagnation in the London shipping market.

Autonomous Shipping Federation
While the shipping concerns were experiencing an unusual boom, the merchants and industrialists interested in the importation of coal, ore, scrap iron and industrial salt in large quantities chafed under the prospects of higher freight rates and difficulty of securing shipping space. The outcry for the enforcement of adequate measures to cope with the situation became louder and louder with the result that Admiral Takuo Godo, former Minister of Commerce and Industry, advocated an alleviation of the restrictions on the purchase of foreign ships as a means of supplying the shortage of bottoms. The suggestion of Admiral Godo failed to be realized on account of an opposition voiced by the shipping circles.

There were indications, however, that if the situation should be allowed to take its own course, the Government might be expected to enforce some measures of control over the shipping concerns on the ground that the rapid rise in freight rates and the shortage of bottoms were accountable for the higher prices of commodities or for the difficulty attending the importation of important raw materials to feed the key industries of the country. Under the circumstances, Mr. Murata, president of the Osaka Shosen Kaisha, proposed the formation of a federation of shipping interests to control the rising tendency of the rates voluntarily. His proposal was supported by all the leading shipping interests and on July 1, representatives of the Nippon Yusen Kaisha, the Osaka Shosen Kaisha, the Kawasaki Kisen Kaisha, the Daido Kaiun Kaisha, the Yamashita Kisen Kaisha, the Kokusai Kisen Kaisha and the shipping department of the Mitsui Bussan Kaisha met together at the office of the Nippon Kaiun Shukaisho in Kobe and their discussions resulted in a decision to organize an Autonomous Shipping Federation with Mr. Murata, the promoter of the scheme, as its chief director.

Following the meeting, the seven shipping firms concerned issued a joint statement which read: "We organize an autonomous federation of shipping companies with a view to promoting the sound development of the maritime transportation business of our country in conformity with the prevailing conditions of our Empire and at the same time increasing the efficiency of our shipping service. The present federation will exert its utmost efforts to smooth the transportation of those materials which are essential to our nation in times of emergency." Simultaneously, the following articles of association were announced:

Article 1: All the companies concerned shall co-operate with one another in a spirit of conciliation with a view to promoting the sound development of the maritime transport business of our country and facilitating the proper operation of shipping in conformity with the requirements of the prevailing extraordinary situation.

Article 2: In order to attain the aim of the present agreement, an autonomous federation of shipping companies shall be organized.

Article 3: The method of operating the present agreement and other details shall be determined by negotiations.

Article 4: The term of the present agreement shall be 3 years beginning from the day of its signing.

Article 5: The term as mentioned in the foregoing article may be extended by the unanimous wish of the members.

In the course of a press interview following the meeting at the office of the Nippon Kaiun Shukaisho in Kobe, Mr. Murata, president of the Osaka Shosen Kaisha, who played the leading part in bringing the Autonomous Shipping Federation into being, said:

"All the companies concerned strongly approved of the organization of the Autonomous Shipping Federation. I am confident that the federation will have a great future, judging from the successful results of the Shipowners' Association. Unlike the latter, however, the autonomous federation will follow a policy of limiting the profits of its member companies. This is based on the fundamental policy of restraining the current rising tendency of the shipping boom while adopting measures for preventing any severe depression in the future.

"The shipping companies have been enjoying much freedom in their business and any system of control is not

likely to be palatable to them. Under the present semi-wartime economic system when all branches of industry and business are steadily coming under Government control shipping concerns cannot hope to escape it. Control by the Government is liable to produce unsatisfactory results since shipping business has problems peculiar to itself which can only be solved by an autonomous organization of the shipping companies and by adoption of voluntary measures of control as decided by that body.

"With this object, the Autonomous Shipping Federation will adopt the following measures:

1. To include in its membership the 7 leading companies with provisions for entrance of others later. Positive efforts will be made to induce other companies to join the federation and thus achieve the complete co-operation of the shipping circles as a whole.

2. To have the consignors form an adequate control organ of their own so that fair freight rates may be determined by collective agreement between the two control organs. To this end the Ministry of Commerce and Industry and the Ministry of Agriculture and Forestry will be sought to use their good offices in inducing the consignors to organize their own control organ.

3. To work as a liaison organization between the Government and the shipping companies.

4. To check the rising tendency of freight rates and see that equitable rates are realized. All the interested quarters are requested to appreciate the fundamental spirit of the federation and render assistance to it and whenever the freight rates charged are considered not equitable, frank criticism is requested."

On July 7, a week after the federation was established, the North China incident took place, imposing upon the federation the unexpected burden of regulating the shipping market in conformity with the requirements of the wartime system.

Shipping Concerns As a result of the outbreak of the China incident, the shipping companies were required to bear the important burden connected with the execution of national policy. The incident directly caused a rapid increase in the demand for bottoms, thus further aggravating the situation created by the shortage of shipping space. In order to deal with the unusually strained conditions of the shipping market, the following measures

were decided upon as a result of the negotiations between the authorities of the Ministry of Communications and the leading shipping companies:

1. Permission for ships registered in the Kwantung Leased Territory and foreign vessels in general to participate in the coastwise trade:

As a means of alleviating the dearth of shipping space, the Ministry of Communications announced on July 31 that in spite of the prohibitive provisions of the shipping law, ships registered in the Kwantung Leased Territory and foreign ships in general would be allowed to take part in the coastwise trade of Japan proper for the time being. Mr. Ryutaro Nagai, Minister of Communications, stated that by enforcing the aforementioned measure, he hoped that the maritime transportation of important commodities in Japan proper would no longer encounter any great obstacle. The Minister also urged the interested industrialists to cooperate in promoting the smooth maritime transport by having a full knowledge of the current situation and considering the urgency of the needs.

2. Fixing of standard freight and charter rates by the Autonomous Shipping Federation:

As the charter market showed an unusually firm tone and freight rates developed a remarkable upward tendency on account of the increased demand for bottoms under the influence of the China incident, the Autonomous Shipping Federation decided to enforce a control toward the end of July. Freight and charter rates, however, continued to show a rising trend with the result that the Ministry of Communications served a warning on the Japan Shipowners' Club on August 2 against speculation and any action tending to hamper the sound development of the maritime transport business.

In response to the warning which was served in the name of the director of the Shipping Control Bureau, the Autonomous Shipping Federation called an emergency meeting of its directors on August 3 and adopted a resolution containing the following two points:

1. To take adequate measures to prevent any rapid rise in freight and charter rates for the time being.

2. To request the co-operation of consignors in remedying the pressure on shipping space.

On the basis of the resolution, the federation immediately formed a special committee with the representatives

of its 7 member companies to determine standard freight and charter rates, curbing the rapid rise in the rates, and at the same time took steps to urge the consignors to create a control organ of their own for efficient co-operation in regulating the transportation of important commodities required under the emergency situation.

The Japan Shipowners' Club also called an emergency meeting of its directors on August 4 and adopted a resolution urging confidence and restraint on the part of the shipping companies. On August 9, practically all the shipping companies in the country gave their approval to the standard freight and charter rates as fixed by the Autonomous Shipping Federation. The federation also intimated the consignors that it would use its good offices in negotiating with its member companies in regard to the supply of bottoms and announced its intention of creating a foreign ship chartering committee to handle matters concerning

the chartering of foreign vessels.

3. Promulgation of the Emergency Shipping Control Law and permission for the participation of old ships in shipping business.

In addition to the afore-mentioned measures, the Government promulgated an emergency shipping control law and in accordance with the provisions of the law, began issuing permission for the purchase of old foreign ships with some restrictions as explained elsewhere in this chapter.

So far the shipping circles remained comparatively quiet on the strength of the foregoing measures. Nevertheless, the coastal service was still characterized by a dearth of space, while the regular liners and tramps assigned to foreign routes were feeling the effect of the decreased volume of imports due to the strengthened import exchange control.

The following table shows the trend of tramp shipping in 1937:

CONDITIONS OF TRAMP SHIPPING

	December 1-10, 1937		July 1-10, 1937		December 1-10, 1936	
	Number of Ships	Tonnage	Number of Ships	Tonnage	Number of Ships	Tonnage
Europe	9	87,218	1	3,080	3	23,792
South America	7	63,978	—	899	3	27,725
Africa	10	95,174	2	21,680	10	94,964
United States (Pacific coast)	23	219,764	13	127,575	1	6,441
United States (Atlantic coast)	32	241,942	15	145,483	16	157,125
Australia	6	58,763	7	63,619	7	64,160
India	21	177,569	—	8,811	5	39,329
Total	108	1,044,408	34	327,787	27	266,646
South Sea Islands and 2nd and 3rd districts of coastwise service	52	358,742	11	97,318	2	15,179
1st district of coastwise service	229	1,015,654	108	565,205	101	590,328
Grand Total (including others)	599	3,789,455	33	244,346	63	409,499

Note: The underlined figures under the heading of comparison denote decrease while those not underlined denote increase.

Emergency Shipping Control Law The bill for the enactment of an emergency shipping control law as a link in the series of economic legislations aiming at the perfection of the wartime economic system in connection with the China incident was presented to the 72nd session of the Imperial Diet and approved by both houses on September 8, and was promulgated on the following day. The principal purpose of the law is, as mentioned in its first article, to adjust the maritime traffic and transport in conformity with the

requirements of the China incident.

The new legislation empowers the Government to control the movements of vessels and makes Government permission necessary for the chartering of vessels and acquisition of foreign vessels, and contains provisions for control of shipping lines, freight rates, shipbuilding and seamen. In other words, the legislation paved the way for the Government to have absolute control over the shipping industry.

Nevertheless, up to the time of writing the actual control of shipping had

been left with satisfactory results to the shipping concerns themselves who are governed by the Autonomous Shipping Federation and the need for the enforcement of the new legislation was not felt till then. The Emergency Shipping Control Law was enacted rather as a reserve measure to be used only in case of necessity, the shipping companies being expected to exercise voluntary control for the most part. This point was clearly brought out in the interpellations and answers at the Diet session. Mr. Ryutaro Nagai, the Minister of Communications also stated in his speech before the general meeting of shipping business men on August 28 that the Emergency Shipping Control Law was not intended to replace the voluntary control imposed upon themselves by shipping companies, but was intended as a complementary measure to facilitate the shipping circles to conform to the actual needs of the prevailing situation.

The following are the major provisions of the Emergency Shipping Control Law which came into force on October 1, 1937:

Article 1: The present law aims at bringing about an effective co-ordination between the maritime traffic and transport facilities in general in connection with the China incident.

Article 2: The persons to whom the present law shall apply are the subjects of the Empire or the juridical persons of the Empire engaged in enterprises of transporting persons or commodities on the sea.

Article 3: When Japanese vessels are about to be transferred by sale, rented (the term "rent" as used herein also implies chartering for a specified period) or offered as security to persons who are not entitled to possess Japanese ships (the expression "Japanese ships" as used herein also implies Japanese shipping as based on orders issued in the Kwantung Leased Territory), the permission of the Government shall be obtained except in cases which are specified by decree.

Article 4: When persons who may possess Japanese ships are about to acquire ships which are not Japanese ships, they shall obtain the permission of the Government. However, an exception shall be made in regard to ships which are specified by decree.

Article 5: The Government may prohibit or restrict the transportation service of Japanese vessels between foreign ports.

Article 6: The Government may specify the routes over which Japanese

vessels may ply and what they may transport and order the shipping companies to operate accordingly.

Article 7: The Government may issue necessary orders to persons engaged in marine transportation business, persons possessing vessels or persons manufacturing ships in regard to the freight rates, charter rates, manufacture of ships or prices of ships.

Article 8: The Government may issue orders to shipbuilding concerns regarding the type of ships to be built, materials to be used, fittings to be contained and other matters concerning the manufacture of ships.

Article 9: The Government may issue necessary orders to shipping companies, or persons possessing ships in regard to the shipping facilities to be provided, the protection of seamen or the perfection of facilities.

Article 10: The Government may order persons engaged in marine transportation business, persons possessing ships or persons manufacturing ships to report on the conditions of their business.

Article 11: The Government may, by decree, make separate stipulations in regard to the qualifications of ships to be put into the service of subsidized routes in accordance with the provisions of the Foreign Routes Subsidy Law.

Article 12: The Government may, by decree, make separate stipulations in regard to how many members of the crew each boat should carry and their qualifications in accordance with the provisions of seamen's law.

Article 13: Before issuing orders in accordance with the provisions of Article 7, the matter shall be referred to the shipping control committee.

The regulations concerning the shipping control committee shall be determined by Imperial ordinance.

Article 14 to 22 omitted.

Article 23: In the case of Chosen and Taiwan, separate stipulations shall be made by Imperial ordinance in regard to the provisions of Articles 11 to 13.

Supplementary Rule: The date of the enforcement of the present law shall be determined by Imperial ordinance. The present law shall be abolished within one year of the termination of the China incident.

The shipping control committee as provided in the Emergency Shipping Control Law was constituted with 33 members headed by Mr. Ryutaro Nagai, Minister of Communications, as the chairman, and the birth of the organization was promulgated on September 20

Upon the enforcement of the above law on October 1, the authorities of the Ministry of Communications issued a statement in regard to the method of operating the law, which in substance read as follows:

Efforts will be made to promote the smooth transportation of important commodities necessary to the nation by placing the maritime traffic and transport facilities under the wartime system.

A. The transfer, etc. of ships is to be restricted.

B. The shipbuilding in Japan proper is to be promoted.

C. Foreign ships less than 17 years old (16 years old according to later modification) are to be permitted to be imported unconditionally while the importation of foreign ships exceeding the said age is to be permitted under condition that the ships shall be scrapped within specified periods.

D. Navigation of Japanese vessels between foreign ports may be put under restrictions or banned altogether when such measures are considered necessary.

Freight and charter rates are to be maintained at an equitable level as a means of checking the rising tendency of the prices of commodities.

A. The upward trend of freight and charter rates is to be restrained.

B. At the same time, adequate measures of control are to be taken in regard to the prices of newly-built ships and the prices of slightly used ships.

Endeavours are to be made to maintain the rights of Japanese to navigate along foreign routes and prevent the trespassing by foreign vessels.

A. Ships are to be put into service on various routes in conformity with their actual conditions and the present positions are to be maintained as much as possible although expansion may be impossible under the prevailing conditions.

Prudence will be used in regard to the actual operation of the Emergency Shipping Control Law.

A. Technical matters are to be studied by a committee of experts composed of 15 members to be created within the shipping control committee.

B. Co-operation of shipping interests, shipbuilding organizations, consignors, traders, marine insurance concerns and bankers is to be obtained in dealing with the current situation.

Acquisition of Old Foreign Ships
The acquisition of foreign ships over 8 years old and having a capacity of developing more than 13 knots had

been practically banned since 1933 owing to the operation of the licensing system for the purchase of foreign ships which was adopted as a means of facilitating the improvement of the quality of ships in this country. When the importation of ore, scrap iron, industrial salt and other important materials became difficult on account of a shortage of bottoms and higher freight rates during the early part of 1937, the then Minister of Commerce and Industry, Admiral Takuo Godo, requested the authorities of the Ministry of Communications to alleviate the restrictions on the purchase of old foreign ships with a view to facilitating the supply of raw materials and checking the rising tendency of commodity prices. The advocacy of the Admiral, however, failed to be realized because of a strong opposition voiced by the authorities of the Communications Ministry as well as the shipping circles on the following grounds:

1. The purchase of old ships from abroad would run counter to the policy of encouraging the construction of superior ships at home, which is being followed at a great sacrifice.

2. The prevailing shortage of shipping space is nothing more than a passing phenomenon and when the large number of ships under construction have been completed, there may even be a surplus space.

3. Higher freight rates is a worldwide phenomenon and cannot be lowered by Japan alone even if the purchase of old ships from abroad should be permitted. Further, the freight rates charged by Japanese shipping companies is rather below the average level of the rates charged by other countries.

When the China incident broke out the question was raised as to what may be done with ships which had been registered in China by Japanese shipping concerns in order to evade the restrictions against the purchase of old foreign ships since there was the possibility of confiscation or requisition by the Chinese Government. It was therefore urged that special allowance should be made for bringing in such ships into this country or the expedient of allowing them to be registered in Dairen should be adopted.

In the meantime, the China incident was amplified and the shortage of bottoms became aggravated. Under the circumstances, the necessity of permitting the purchase of old vessels from abroad began to be felt, quite apart of the question as to the ships

registered in China. The authorities of the Ministry of Communications abandoned their policy to stick to the "superior ship" principle and resolved to permit the importation of old ships under certain conditions in accordance with the provisions of Article 4 of the shipping control law. Under the new rule, the importation of ships less than 16 years old is to be permitted unconditionally while the importation of ships exceeding the said age is to be permitted under condition that they shall be scrapped within periods specified by the Minister of Communications.

National Policy on Shipping Various expenses were calculated and approved at the 70th session of the Imperial Diet for the execution of the national policy on shipping. Principal among them were Government grants to supply shortage of funds for the construction of ships and to make compensation for losses arising from advances to shipbuilders, subsidies for the operation of foreign lines, and aids to the construction of superior vessels.

1. Establishment of financial facilities for shipbuilding:

A continuation expenditure of ¥70,000,000, spreading over a period of 4 years, was calculated with a view to granting a sum to the Industrial Bank of Japan as a supplement to the interest on the advances it had made for construction of ships. The amount of this grant is to correspond to one per cent of the amount of advances. The estimate also includes compensation for any losses arising from advances to persons constructing ships, the amount of compensation being equal to 70 per cent of the actual losses.

As a rule, the afore-mentioned Government aid was intended to be limited to the construction of steel vessels of more than 4,000 tons and having a capacity of developing a maximum speed of more than 13 knots. However, it was stipulated that under special circumstances ships of more than 2,000 tons and having a capacity of developing a maximum speed of more than 11 knots may be entitled to the Government aid with the permission of the Minister of Communications.

2. Subsidies for the operation of foreign services:

A total of ¥10,434,000 was intended to be appropriated during a period of 5 years to subsidize ships of less than 25 years old and more than 4,000 tons, which have conducted a voyage outside the first district of the coastwise service for 180 days or more, at the

rate of ¥0.90 per ton.

3. Aid to the construction of superior ships:

Ships to receive this aid were divided into two classes, passenger ships and freight ships. A total of approximately ¥44,700,000 was calculated to be granted to ships of the first category during the period ending 1934 and a total of ¥6,000,000 to those of the second during the period ending 1940. It was calculated that ships of an aggregate displacement of 300,000 tons, including 150,000 tons in the first class and 150,000 tons in the second class, would be completed within 4 years by the Government aid.

Japan and Great Britain In the face of the remarkable advance of Japanese shipping, British interests began to pay attention to the shipping relations between the two countries. Some circles advocated that Japanese shipping should be forbidden to take part in the coastwise services of India, Singapore and Hongkong. As a result, the Government of India formally proposed to the Japanese Government in April, 1937, to find a solution to the shipping question. The proposal contained the following two points:

1. The Japanese Government is requested to assure that Japanese vessels will never take part in the coastwise services of India as well as the services between Burma and India in the future.

2. The Japanese Government is requested to see that Anglo-Japanese shipping conversations are held to adjust properly the shares of Japanese and British companies in receiving consignments between India and Japan.

In reply to the proposal, the Japanese Government stated that as the Japanese shipping companies were virtually observing a self-restraint in regard to the services between India and Burma and the coastwise services of India, it did not see any necessity of giving the requested assurance. With reference to the second point, the Japanese Government intimated that the question of adjusting the shares of Japanese and British companies in receiving consignments between India and Japan must be determined by the shipping companies of the two countries concerned and that it was not proper for the Japanese Government to interfere in such matter.

There were also the question of the Madras line concerning the Mitsui, the N. Y. K. and the B. I., the question of loading shares in connection with the Japan-Calcutta tariff alliance, the question of Japanese vessels gaining a foot-

hold in the Persian line and the question of a revision of the pool point in the Japan-Australia line. At the instance of the Japanese Government, the N. Y. K., the O. S. K., the Mitsui and the Yamashita proposed to the P. O., B. I. and I. C. in July to conduct negotiations at Tokyo, Kobe or Shanghai. The British side replied on August 16, expressing approval of the proposal but asking to hold the negotiations at Calcutta. At that time, however, the Japanese shipping concerns were much occupied with the situation arising from the China incident and it was impossible for them to send their representatives to Calcutta. Further, the Japanese shipping companies had already withdrawn their vessels from the Indian route on account of a shortage of bottoms. Under the circumstances, both sides lost interest in the proposed negotiations which were accordingly postponed indefinitely.

Japan and Australia The shipping question pending between Japan and Australia concerns the demand of the E. A. for revising the wool pool rate. The original rate was 26 per cent for each of the three Japanese organizations (N. Y. K., O. S. K. and J. A.) and 20 per cent for the E. A. of Australia, but the latter demanded a revision in the rate to 25 per cent for each of the shipping lines. The first conversations between the Japanese and Australian shipping businessmen were scheduled to be held at Tokyo on December 20 but had to be postponed because of a difference in opinion over the Australian proposal to have the Australian trade

representative at Tokyo participate in the conversations. It was decided to hold the conversations in 1938.

Construction of Ships The boom in the shipping industry and the shortage of bottoms led to active orders for the construction of new ships. According to a survey of the Japan Shipowners' Club, the period beginning January and ending November witnessed the placing of orders involving the construction of 83 new ships of more than 1,000 tons each, or a total tonnage of 686,000 tons. The dockyards were already fully occupied at the end of the first half of the year with previous orders and new orders were received to be filled in and after 1938.

In the meantime, the construction cost of ships rose rapidly on account of higher prices of iron and other materials. This, coupled with the difficulty of foreseeing how long the shipping boom would last, served to dampen the enthusiasm for the construction of new ships. As a result, ships under construction at the dockyards throughout the country began to show a gradual decrease after their number had reached 171 with a total tonnage of 1,242,370 at the end of June. Practically no orders for new ships were placed following the outbreak of the China incident because of the difficulty of obtaining the necessary supply of steel materials.

Details of the ships under construction at the dockyards throughout the country during 1937 are shown in the following table:

Kind of Ships	At End of October		At End of June	
	Number	Tonnage	Number	Tonnage
Freighters	115	754,137	131	871,950
Tankers	12	78,200	18	181,100
Whaling depot-ships	3	66,000	5	103,000
Passenger and freight ships	14	176,800	12	95,000
Other ships	5	8,420	5	8,200
Total	149	1,083,557	171	1,249,270

The following are tables showing the principal shipping companies possessing steamers of over 1,000 tons and the

number and total tonnage of such ships as owned by each of the interests.

1. Those Registered in Japan Proper (August, 1937)

Owner	Location	Number of Ships	Total Tonnage
Nippon Yusen Kaisha	Tokyo	87	635,283
Osaka Shosen Kaisha	Osaka	108	514,525
Kokusai Kisen Kaisha	Tokyo	27	160,992
Mitsui Bussan Kaisha	..	36	156,241

Owner	Location	Number of Ships	Total Tonnage
Kinkai Yusen Kaisha	"	48	153,706
Yamashita Kisen Kaisha	Kobe	14	82,400
Kawasaki Kisen Kaisha	"	18	80,907
Nippon Fishery Company	Tokyo	13	73,118
Kuribayashi Shosen Kaisha	Muroran	19	64,891
Toyo Kisen Kaisha	Tokyo	11	63,556
Kawasaki Dockyard Company	Kobe	10	62,921
Tatsuma Kisen Kaisha	Nishinomiya	15	62,550
Kita-Nippon Kisen Kaisha	Otomari in Karafuto	26	61,816
Ministry of Railways	Tokyo	15	54,791
Nanyo Kaiun Kaisha	Tokyo	11	54,695

2. Those Registered in the Kwantung Leased Territory

Owner	Location	Number of Ships	Total Tonnage
Dairen Kisen Kaisha	Dairen	47	170,319
Yamashita Kisen Kaisha	"	2	10,688
Taisho Kaiun Kaisha	"	1	8,230
Tatsuma and Company	"	1	6,537
Ryuo Kisen Kaisha	"	1	6,243
Shunwa Kisen Kaisha	"	1	6,169
Shaka Kisen Kaisha	"	1	5,307

3. Those Registered in Chosen

Owner	Location	Number of Ships	Total Tonnage
Chosen Yusen Kaisha	Keijo (Seoul)	21	43,291
Kaburagi Hidetane	Jinsen (Chemulpo)	2	2,483

Note: The above tables cover only the leading interests concerned. The figures given therein are based on a survey conducted at the end of August, 1937, by the Ministry of Communications.

According to a survey conducted by the Japan Shipowners' Club, there were at the end of November, 1937, a total of 136 ships of more than 1,000 tons each, involving a total tonnage of 1,023,397 tons, which were either under construction or scheduled to be constructed. Details are given in the following table:

Dockyard	Freight Ships		Tankers		Whalers, etc.	
	Number	Dead-weight tonnage	Number	Dead-weight tonnage	Number	Dead-weight tonnage
Hakodate Dock Company	3	11,100	—	—	—	—
Harima Dockyard	11	75,500	4	44,500	2	2,400
Kawasaki Dockyard	9	72,300	8	108,000	3	45,670
Matsuo Dockyard	4	31,300	—	—	—	—
Mitsubishi Nagasaki Dockyard	15	142,300	—	—	—	—
Mitsubishi Kobe Dockyard	6	41,270	—	—	—	—
Mitsubishi Yokohama Dockyard	12	80,750	1	13,300	—	—
Tama Dockyard	18	120,100	—	—	—	—
Namura Dockyard	1	2,800	—	—	—	—
Osaka Iron Works	6	38,457	—	—	1	24,000
Osaka Dockyard	3	7,500	—	—	—	—
Ohara Dockyard	1	2,100	—	—	—	—
Tsurumi Iron Mfg. and Shipbuilding	4	29,400	—	—	—	—

Dockyard	Freight Ships		Tankers		Whalers, etc.	
	Number	Dead-weight tonnage	Number	Dead-weight tonnage	Number	Dead-weight tonnage
Tochigi Dockyard	1	2,000	—	—	—	—
Urabe Dockyard	2	5,000	—	—	—	—
Uraga Dockyard	5	37,800	—	—	1	1,050
Nakata Dockyard	1	1,600	—	—	—	—
Naniwa Dockyard	1	3,700	—	—	1	1,300
Total	103	704,977	13	165,800	8	74,420
Cf.						
Total at end of preceding month	115	754,137	14	176,800	8	74,420

Dockyard	Passenger Ships or Freight-Passenger Ships		Total	
	Number	Gross Tonnage	Number	Dead-weight Tonnage
Hakodate Dock Company	—	—	3	11,100
Harima Dockyard	—	—	17	122,400
Kawasaki Dockyard	—	—	20	225,970
Matsuo Dockyard	—	—	4	31,300
Mitsubishi Nagasaki Dockyard	2	26,000	17	157,700
Mitsubishi Kobe Dockyard	3	15,200	9	57,770
Mitsubishi Yokohama Dock	—	—	13	94,050
Tama Dockyard	3	30,900	21	151,000
Namura Dockyard	—	—	1	2,800
Osaka Iron Works	—	—	7	62,457
Osaka Dockyard	—	—	3	7,500
Ohara Dockyard	—	—	1	2,100
Tsurumi Iron Mfg. and Shipbuilding	—	—	4	29,400
Tochigi Dockyard	—	—	1	2,000
Urabe Dockyard	—	—	2	5,000
Uraga Dockyard	4	15,000	10	54,250
Nakata Dockyard	—	—	1	1,600
Naniwa Dockyard	—	—	2	5,000
Total	12	87,100	136	1,023,397
Cf.				
Total at end of preceding month	12	87,100	149	1,083,557

The following table which is based on a survey conducted by the Ministry of Communications shows the changes which places in the conditions of laid-up ships in the principal harbours in the country during the three years ending in 1937:

LAID-UP SHIPS IN PRINCIPAL PORTS

Kind of Vessels	Compared with							
	In Middle of October, 1937		In Middle of September, 1937		In Mid-October of 1936		In Mid-October of 1935	
	Num-ber	Ton-nage	Num-ber	Ton-nage	Num-ber	Ton-nage	Num-ber	Ton-nage
Steamships	178	9,657	6	418	<u>16</u>	<u>46,859</u>	<u>16</u>	<u>46,859</u>
Sailing-ships	124	5,329	3	249	2	82	2	82
Iron-steel ships	50	5,869	6	1,278	14	45,883	14	45,883
Wooden ships	252	9,617	3	611	—	<u>1,058</u>	—	<u>1,058</u>
Vessels of more than 1,000 tons each	—	—	—	—	12	45,063	12	45,608
Total	302	15,466	9	667	14	46,941	14	46,941

Note: All figures under the heading of comparison denote increase except those underlined which denote decrease.

PLANNED CAPITAL OF MARITIME TRANSPORTATION
SHIPBUILDING AND DOCK COMPANIES

(In ¥1,000)

	Total Planned Capital			Maritime Transport		
	Newly Es- tablished Capital	Increase in Capital	Debenture Total	Newly Es- tablished Capital	Increase in Capital	Total
1937						
April	120,260	123,695	2,500	—	—	14,680
May	122,220	190,031	13,000	1,000	—	—
June	153,475	125,635	28,000	5,250	12,000	—
July	189,165	137,420	5,000	1,000	9,500	—
August	175,865	56,525	13,500	100	3,000	—
September	—	—	—	—	—	—
October	—	—	—	—	—	—
1936						
October	99,910	76,770	—	250	—	—
1937						
January-October total,	—	—	—	—	—	—
1936						
January-October total,	561,538	784,211	254,428	1,600,178	8,300	9,500

	Maritime Transport		Shipbuilding and Dock			
	Debenture	Total	Newly Es- tablished Capital	Increase in Capital	Debenture	Total
April 1937	—	14,680	—	—	—	—
May 9..	—	1,000	1,000	10,000	—	11,000
June ..	—	17,250	—	1,500	—	1,500
July ..	—	10,500	13,000	5,000	—	18,000
August ..	—	3,100	4,000	—	—	4,000
September ..	—	—	—	—	—	—
October ..	—	—	—	—	—	—
October 1936	—	250	—	—	—	—
January-October total,	—	—	—	—	—	—
1937	—	—	—	—	—	—
January-October total,	—	—	—	—	—	—
1936	—	17,800	1,500	—	—	1,500

Note: The above figures are based on the returns of a survey conducted by the Bank of Japan.

Japan-Manchoukuo Shipping Manchoukuo has few good sea ports, except Dairen, Yingkow and Antung; Hulutao being under construction. Seaborne trade between Japan and Manchoukuo is carried on mainly through Dairen and the three ports in North

Korea. A comparison of trade which passed through Dairen and the number and tonnage of vessels which put into or cleared the port in 1931 (the year of the Manchurian incident) and 1936 is given below:

TRADE VIA DAIREN

(In 1,000 tons)

	Imports		Exports		Number and Tonnage of Vessels			
	1931	1936	1931	1936	Number		Tonnage	
Total	786	3,052	5,933	5,860				
From Japan	425 (54%)	2,187 (72%)	3,262 (55%)	4,047 (69%)				
Total	6,719	8,912	3,687 (55%)	6,234 (70%)				
Re Japan	3,687 (55%)	6,234 (70%)						
					1931		1936	
					Total	4,003	5,690	
					Japanese vessels	2,705 (68%)	3,802 (67%)	
					Total	11,657	15,420	
					Japanese vessels	7,474 (64%)	10,248 (66%)	

LIST OF LARGE N. Y. K. VESSELS

	Tonnage: Gross	Passenger Accommodation:			
		1st Class	Cabin Class	2nd Class	Tourist Cabin
M.S. Chichibu Maru	17,526	243	—	95	—
M.S. Asama	16,975	239	—	96	—
M.S. Tatuta	16,975	239	—	96	—
S.S. Taiyo	14,458	—	91	—	241
M.S. Terukuni	11,931	121	—	68	—
M.S. Yasukuni	11,933	119	—	68	—
M.S. Hikawa	11,622	—	76	—	69
M.S. Hié	11,621	—	76	—	69
M.S. Heian	11,615	—	76	—	69
S.S. Husimi	10,936	84	—	38	—
S.S. Suwa	10,672	81	—	38	—
S.S. Hartana	10,421	83	—	40	—
S.S. Hakone	10,420	83	—	40	—
S.S. Hakozaki	10,413	83	—	40	—
S.S. Hakusan	10,380	85	—	40	—
S.S. Kasima	9,908	72	—	34	—
S.S. Katori	9,849	72	—	34	—
M.S. Helyô	9,816	42	—	—	80
S.S. Rakuyô	9,419	42	—	—	51
S.S. Anyô	9,257	—	24	—	47
S.S. Bokuyô	8,619	34	—	—	53
S.S. Ginyô	8,613	—	20	—	37
S.S. Atuta	7,983	57	—	14	—
S.S. Kamo	7,955	53	—	14	—
S.S. Kitano	7,952	57	—	14	—

LIST OF LARGE O. S. K. SHIPS

Name of S.S.	Gross Tonnage	Nominal Horse Power	Year Constructed
S.S. Arizona	9,683	5,500	1920
M.S. Rio de Janeiro	9,626	5,000	1929
M.S. Buenos Aires	9,625	5,000	..
M.S. La Plata	7,266	3,800	1925
M.S. Santos	7,266	3,800	1925
M.S. Montevideo	7,266	3,800	1926
S.S. Arabia	9,480	5,500	1918
S.S. Africa	9,475	5,500	..
S.S. Manila	9,486	5,600	1915
S.S. Hawaii	9,467	4,800	1915
S.S. Horai	9,192	7,400	1912
S.S. Mizuho	8,506	6,400	..
S.S. Takachiho	8,154	7,100	1933

LIST OF KOKUSAI LINERS

	Deadweight Capacity Tons	Main Diesel Engine B.H.P.	Maximum Speed Knots
M.V. Kagu Maru	9,206	7,000	19.7
M.V. Kano	9,689	7,600	19.4
M.V. Kasii	9,240	7,000	19.6
M.V. Katuragi	9,581	6,000	18.0
M.V. Kinka	10,096	9,200	23.6
M.V. Kinryu	—	9,200	—
M.V. Kinugasa	9,199	7,000	19.3
M.V. Kirisima	9,781	6,000	18.3
M.V. Kiyosumi	9,849	7,600	19.7
M.V. Komaki	9,779	7,600	19.6
M.V. Kongo	9,801	7,600	19.7
M.V. Kurama	10,294	4,050	17.0

SEA TRANSPORTATION

SHIPS REGISTERED

(On September 30, 1937)

Steamships

Tonnage	Japan Proper		Korea		Formosa		Kwantung		Total	
	No.	Gross tons	No.	Gross tons	No.	Gross tons	No.	Gross tons	No.	Gross tons
20- 100	1,871	82,935	465	19,762	130	6,190	48	2,580	2,514	111,467
100- 500	686	164,390	45	8,665	12	2,724	22	5,630	765	181,409
500- 1,000	212	158,367	7	4,881	1	768	5	3,672	225	167,688
1,000- 3,000	372	695,425	20	38,533	—	—	19	36,357	411	770,315
3,000- 6,000	367	1,640,534	4	13,393	—	—	37	165,171	408	1,819,028
6,000-10,000	169	1,262,094	—	—	—	—	5	33,291	274	1,295,385
over 10,000	21	271,821	—	—	—	—	—	—	21	271,821
Total	3,698	4,275,566	541	85,234	143	9,682	136	246,701	4,518	4,617,143

Sailing Ships

Tonnage	Japan Proper		Korea		Formosa		Kwantung		Total	
	No.	Gross tons	No.	Gross tons	No.	Gross tons	No.	Gross tons	No.	Gross tons
20- 100	14,057	652,351	1,026	37,158	38	2,337	273	12,025	15,394	702,871
100- 500	2,070	291,217	13	1,730	7	1,021	2	318	2,092	296,286
500-1,000	4	2,229	—	—	—	—	—	—	4	2,229
over 1,000	4	9,507	—	—	—	—	—	—	4	9,507
Total	16,135	956,304	1,039	38,888	45	3,358	275	12,343	17,494	1,010,693

Other Sailing Ships Measured In Koku

(10 koku counted as one ton)

Koku	No.	Gross tons	No.	Gross tons	No.	Gross tons	No.	Gross tons	Total
200- 500	80	23,123	—	—	—	—	—	—	80 23,123
500-1,000	—	—	—	—	—	—	—	—	—
over 1,000	—	—	—	—	—	—	—	—	—
Total	80	23,123	—	—	—	—	—	—	80 23,123

Grand Total	No.	Gross tons	No.	Gross tons	No.	Gross tons	No.	Gross tons	Total
	19,913	5,234,182	1,580	124,122	188	13,040	411	259,044	22,092 5,630,388

REGISTERED SHIPS IN JAPAN PROPER

(Since 1870)

End of	Steamers		Sailing Ships		Other Sailing Ships Measured in Koku		Total	
	No.	Gross tons	No.	Gross tons	No.	Gross tons	No.	Gross tons
1870	35	24,997	11	2,611	—	—	46	27,608
1882	198	64,313	399	51,684	—	—	597	115,997
1892	375	157,147	239	34,163	—	—	614	191,310
1897	626	426,624	171	27,412	—	—	797	454,036
1902	1,033	605,122	3,591	329,839	1,260	548,422	5,884	989,803
1907	1,574	1,109,444	4,210	357,275	1,168	442,399	6,952	1,510,959
1912	1,981	1,430,329	6,443	441,039	1,671	554,834	10,095	1,926,851
1916	2,159	1,696,631	9,314	585,593	1,171	380,116	12,644	2,320,236
1921	2,955	3,167,737	14,280	960,947	830	264,419	18,065	4,155,126
1926	3,246	3,607,038	14,184	873,468	564	177,073	17,994	4,498,213
1930	3,351	3,907,908	15,380	896,272	367	117,041	19,098	4,815,884
1932	3,308	3,874,619	15,038	867,658	308	97,060	18,654	4,752,283
1933	3,295	3,780,197	14,981	862,846	275	87,401	18,551	4,752,283
1934	3,365	3,811,773	15,062	874,935	229	71,623	18,656	4,693,870
1935	3,471	3,862,942	15,289	900,792	154	48,047	18,914	4,768,538
1936	3,602	4,034,284	15,687	930,322	97	29,316	19,385	4,967,532
1937 (Sept.)	3,699	4,275,566	16,135	956,304	80	23,123	19,913	5,234,182

SHIPS REGISTERED

Shipbuilding Yards Private shipbuilding yards capable of building ships of more than 20 tons numbered 515, those capable of building ships of more than 100 tons numbered 236, and other smaller ones 42, making a total of 793.

SHIPS LAUNCHED DURING 1936:

(Ships smaller than 100 tons omitted)

Category	Number	Tonnage
Steamers	133	193,286
Sailing ships	107	14,382
Total	240	307,667

SHIPS BUILT AT PRIVATE YARDS

Steam Boats Sailing Boats

Year	No. of Private Yards	No.	Gross tons	No.	Gross tons
1907	81	112	12,431	66	4,391
1907	224	76	28,858	220	16,841
1912	228	168	48,155	372	28,899
1916	219	94	144,024	519	45,631
1920	352	69	226,081	12	1,711
1926	324	27	51,303	5	560
1930	430	49	148,382	11	5,849
1932	531	46	56,054	20	2,679
1933	559	39	75,907	28	3,913
1934	588	78	141,856	99	13,004
1935	697	94	132,365	101	13,536
1936	793	133	293,285	107	14,382

Note: Figures for 1926 and after do not include boats smaller than 100 tons.

HOLDERS OF CERTIFICATE OF COMPETENCY AS MARINERS

End of	Japanese	Foreigners	Total
1882	1,901	325	2,226
1912	26,139	351	26,490
1916	33,976	351	34,327
1921	45,775	349	46,124
1926	60,154	132	60,286
1930	76,787	132	76,919
1932	89,177	132	89,309
1933	92,751	132	92,883
1934	96,469	132	96,601
1935	101,370	132	101,502
1936	106,080	132	106,212
1937 (June)	107,852	132	107,984

HOLDERS OF MARINERS'

SERVICE BOOK

End of	Japanese	Foreigners	Total
1902	79,753	774	80,527
1907	164,293	1,109	165,402
1912	206,806	1,289	208,095
1916	254,597	2,853	256,950
1921	357,174	5,000	362,174
1930	212,917	4,823	217,740
1932	233,910	5,098	239,008
1933	175,251	2,877	178,128
1934	166,693	2,218	168,911
1935	186,437	2,287	188,724
1936	205,849	2,366	208,215
1937 (June)	217,940	2,398	220,338

CHAPTER XXVII JUSTICE AND POLICE

Judicature

The Judicature's Position

Since the promulgation of the Japanese Constitution in 1889, the right of the sovereignty of the Emperor has been divided into the three distinct departments, of legislation, judicature and administration.

In accordance with Article 57 of the Constitution, "the Judicature shall be exercised by the Courts of Law according to law, in the name of the Emperor." Judges are appointed from among those possessing such qualifications as are determined by law and they are guaranteed by the Constitution against being deprived of their positions unless by way of criminal sentence or disciplinary punishment. Not only are the judges guaranteed their positions, but they have authority in exercising judicial power to judge on their own independent views, using the statutes as the sole standard of judgment without being in any way swayed by interference from others and unaffected by authority arising from any quarter.

Since the judges are entirely independent of the administration the results of judicial decisions are equally independent thereof, and the decisions are not affected by the administrative power except in cases of pardon or provisional release.

Composition of the Courts

In Japan, the ordinary Courts of Law for the adjudication of civil and criminal cases consist of (1) District Courts (Kusai-bansho), (2) Local Courts (Chihō-Sai-bansho), (3) Courts of Appeal (Kosō-in), and (4) the Supreme Court (Taisshin-in). The District Courts, the Courts of Appeal and the Supreme Court are all collegiate courts with special divisions, in each of which sit a number of judges.

District Courts The District Courts are presided over by single judges. A three instance system is adopted in the adjudication of all ordinary cases, and any one may lodge an appeal against a judgment rendered in the first instance and demand revision of that rendered in the second instance.

In the matter of civil cases, the District Courts possess judicial power to adjudicate on the following matters in the first instance:

1. Demands for money less than 1,000 yen or for articles, the value of which is less than 1,000 yen.

2. The following cases irrespective of value:

(a) Legal actions brought by lessors against lessees, or vice versa, for the receipt, vacation, use, occupation or repair of houses or other buildings or parts thereof, or for the seizure of the furniture and fixtures or belongings of lessees by lessors.

(b) Legal actions only concerning the boundaries of real estates.

(c) Legal actions only concerning occupations.

(d) Legal actions brought by employers against employees, or vice versa, for contracts of employment, the terms of which do not exceed one year.

(e) Legal actions brought by travelers against hotel or inn keepers, or vice versa, for matters concerning board or lodging, or by travellers against water or land forwarding agents, or vice versa.

(f) Matters concerning bankruptcy.

In criminal cases, the District Courts as the courts of law for adjudication in the first instance, possess judicial power concerning the following matters, provided they have not been subjected to preliminary examination:

1. Offences punishable with detention or fine.

2. Offences punishable with penal servitude, imprisonment for fixed terms or by imposition of fines, except those punishable with penal servitude or imprisonment for more than one year.

Local Courts In civil cases, the Local Courts possess judicial power concerning the following matters:

1. In the first instance:

Demands other than those falling under the jurisdiction of the District Courts or of the Courts of Appeal.

2. In the second instance:

(a) Appeals lodged against judgments rendered by the District Courts;

(b) Demands determined by law for revision of decisions or orders rendered

by the District Courts.

Further, with reference to criminal cases, the Local Courts possess judicial power concerning the following matters:

1. In the first instance:

Criminal cases falling neither under the jurisdiction of the District Courts nor under the special jurisdiction of the Supreme Court.

2. In the second instance:

(a) Appeals lodged against judgments rendered by the District Courts;

(b) Complaints determined by law against decisions or orders rendered by the District Courts, except those falling under the jurisdiction of the Supreme Court.

Courts of Appeal The Courts of Appeal possess judicial power concerning the following matters:

1. Appeals lodged against judgments rendered in the first instance by the Local Courts.

2. Complaints determined by law against decisions or orders rendered in the first instance by the Local Courts, except those falling under the jurisdiction of the Supreme Court.

Powers to adjudicate in the first and second instances in civil cases brought against the members of the Imperial Family belong to the Tokyo Court of Appeal.

The Supreme Court The Supreme Court (Taisshin-in) is the highest court of law and possesses judicial power concerning the following matters:

1. In the final instance:

(a) Appeals against judgments rendered by the lower courts;

(b) Complaints determined by law against decisions or orders rendered in the second instance by the Local Courts or by the Courts of Appeal;

(c) Complaints against decisions to reject appeals made by the District or Local Courts.

2. In the first, and at the same time, final instance: Preliminary examination and adjudication of offences against the Imperial House, offences of internal disturbance, and offences committed by members of the Imperial Family, for which punishment heavier than imprisonment should be imposed.

Public Procurators

A public procurator's office, with the necessary number of procurators, is attached to each court. The work of the public procurator is, in accordance with the code of criminal procedure, to take legal actions, to go on with necessary legal proceedings, to demand a right application of the law, and to observe

the right execution of a judgment. According to the code of civil procedure, he also has rights to ask for a report whenever he thinks it necessary and present his opinions to the court on it, and as a representative of public welfare he carries out his supervising business as laid down by the law in all judicial and administrative matters related to the court. But the public procurator acts absolutely independently of the court.

Court Officials and Procurators

Qualifications Candidates for the office of judge or procurator are chosen by the Minister of Justice from among those who have passed the higher judicial service examination. The selected candidates then have to serve a term of over one and a half years of probation in the courts or in a public procurator's office and pass a further examination, after which, should the report on their estimated ability be favourable, they will receive an appointment as judge or procurator. But those who have been professors of law in the Imperial Universities or lawyers of over three years standing can be appointed as judges or public procurators without examination and estimation.

The following are not to be appointed as either judges or public procurators.

(1) Those who have been convicted of a grave crime, with the exception of those political offenders who have been rehabilitated.

(2) Those who have served sentences on minor offences.

(3) Those who have been adjudicated bankrupt and could not be exempted from the responsibility.

Position of Judges and Public Procurators Judges are permanent officials appointed by His Majesty directly, or by His Majesty's order indirectly, or by His Majesty's approval, according to the grade of their position. Unless by way of criminal sentence or disciplinary punishment judges are not to be moved to another post or place, be suspended from office, be deprived of position, or receive a reduction of salary, without their consent, except in so far as the Minister of Justice may order retirement from service by the decision of a general meeting of the Court of Appeal or the Supreme Court on account of disability caused through weakness of body or mind.

The retiring age is for the President of the Supreme Court 65 years, and for other judges 63 years.

The public procurators are appointed by His Majesty directly or by His

Majesty's order indirectly or by His Majesty's approval. Unless by way of criminal sentence or disciplinary punishment the public procurators are not to be deprived of their positions against their own will.

The Procurator-General at the age of 65 years and all other public procurators at 63 years of age must retire from service. A public procurator must obey the orders of higher authorities and judicial policemen must obey the orders issued by the public procurators or through them within the district of jurisdiction of the public procurator's office.

The Jury System

In 1923 the Jury Law was issued, and Japan finally adopted the jury system under which persons other than judges are allowed to take part in criminal trials. The jury system is used in such criminal cases as where the punishment may be capital, or penal servitude or imprisonment for life. Other criminal cases in which the sentence may be penal servitude or imprisonment for a term longer than 3 years are tried by jury only upon demand of the accused and when they come within the jurisdiction of the Local Courts. The following cases are not submitted to trial by jury:

(1) Offences which come under the special authority of the Supreme Court.

(2) Offences against the Imperial House, causing an internal disturbance, helping an enemy, disturbing international relations, and sedition.

(3) Violations of the Peace Maintenance Law.

(4) Violations of the Military Secrets Preservation Law, the Army or Navy Criminal Laws or any other offences in connection with military secrets.

(5) Violations of the Public Election Laws.

The accused can refuse to have his case tried by jury or withdraw his own demand to be tried by jury at any time previous to the statement of the case by the public procurator, under which circumstances the case cannot be referred to a jury.

The jury is composed of 12 men. At the trial, the chief judge, after having heard all the evidence for and against the accused, sums up the facts and main points of the case, and charges the jury to deliberate and render its verdict by a majority vote. The verdict must be a simple statement as to guilt or otherwise. If the court considers the verdict improper the case may be referred to another jury.

In a case where sentence has been

passed on a jury's verdict of guilt, no appeal can be made to the Court of Appeal, but a demand for revision may be presented to the Supreme Court.

Penal System

History It was in the time of the Empress Suiko, 620 A.D., that the first written Penal Code was issued in Japan. The code was very simple, but later the Chinese penal code, the "T'o", was introduced and the Japanese code was drafted in a more systematic manner and promulgated by the Emperor Meiji, in 702, as the "Taho Ritsu-Ryo." Five kinds of punishment were mentioned, namely, flogging, whipping, penal servitude, exile, and death, but in most cases these could be varied to confiscation of property or payment of a fine. Grave crimes were treason, atrocious blasphemy, undutifulness to one's parents, adultery, etc. Confession of the accused was required as a necessary procedure of a criminal suit, and naturally torture was recognized as an indispensable means of obtaining such a confession. Several hundred years after the issuance of the Taho Ritsu-Ryo the Shogunate Governments adopted extremely terroristic penal systems with the purpose of preventing the occurrence of criminal cases. One of the most important of them was the One Hundred Criminal Regulations of the Tokugawa Shogunate. It was a secret criminal code which was not published and was accessible to the judges only, an expression of the despotism of the ruling class that had as its motto, "leave the people ignorant of the details of law."

With the downfall of the Tokugawa Shogunate the Great Emperor Meiji abolished the system of intimidation and reformed the old penal code. The codification of Civil Law was carried on under the advice of Monsieur Gustave Boissonade, a French scholar of jurisprudence who was invited to Japan for that purpose. A new Penal Code and Criminal Procedure Law, the characteristics of which were that "though the lawful punishment of criminals is assured, the penalties are tempered with sympathy toward the accused and are in no ways severe," were enacted and promulgated. "No crime shall be punished unless there is a regulation in the law." (*nullum crimen et nulla poena sine lege*) is one of the guiding principles of the code, which was formulated on the French penal code of 1810. Within a few years it was found that the new code was out of date and various amendments were discussed from 1884 to 1907, in

which year a thorough revision was made and the present Penal Code issued. Since then the social conditions of the people have undergone rapid changes, more advanced theories regarding penalties have been gaining ground and so many defects have been noticed in the present code, that in 1926 the Extraordinary Legislative Committee passed a resolution that the Penal Code should be revised. A special investigation committee set to work and in 1931 an outline and draft of a revised penal code and prison law was drawn up. It is expected that the thorough study of the draft that is now going on will soon be completed.

Penalties Penalties are divided into six kinds, namely, the death penalty, penal servitude, imprisonment, monetary penalties, custody, and fines. Confession is recognized as an additional punishment. The death penalty is by hanging and is carried out in prison. Penal servitude and imprisonment are for limited terms and for life; limited terms extend from one month to 15 years. Under penal servitude labour is compulsory, but a prisoner serving a term of imprisonment is not compelled to work, though he may be allowed to do so at his own request. A monetary penalty is 20 yen and above, unless made lighter on decision. Custody is from one to under 30 days, and a fine is from 10 yen to less than 20 yen. Those who cannot pay monetary penalties and fines are kept in workhouses as an alternative.

Suspension of Sentence and Provisional Release The present penal law allows probation. The execution of a penalty often leads to self-abandonment and turns comparatively harmless people, who are not yet addicted to criminal deeds, into habitual jail-birds. This is found to be especially so when the penalty is one of penal servitude for a short time, and it is, therefore, far better for people convicted of light and incidental offences to be excused from the real infliction of the penalty under special conditions and to be given proper admonitions in order to make them repentant by self-examination. Consequently, the Japanese courts are empowered, under certain conditions, to postpone the execution of sentence for from one to five years, beginning with the day of the sentence and according to the nature and condition of the case, on persons sentenced to penal servitude or imprisonment for less than 2 years.

Probation is cancelled (1) when the probationer, during the time of probation, commits another offence and is sentenced to imprisonment or is given a

heavier sentence, (2) when the probationer is sentenced to imprisonment or a heavier penalty is imposed because of some other crime committed before the granting of probation, and (3) when, in cases not mentioned above, the probationer is found to have had at some previous time a sentence of imprisonment or some other heavier penalty inflicted on him. Should the term of probation expire without being revoked the sentence is automatically cancelled thereby. The draft of the penal code of 1931, besides confirming the system of probation, admits the principle of postponement of passing sentence in specially pitiable cases of a non-serious nature.

Release on parole was practised as early as 1790 in the House of Correction at Ishikawajima, Yedo; the present law admits it and it is widely practised. As reformation is one of the chief aims of punishment, when convicts are evidently repentant and there is no fear of their committing further crimes, it is unnecessary to continue the punishment. Therefore, it is stated in the present Penal Code, "when the convicts who are under penal servitude or imprisonment are found to be evidently repentant, provisional release may be authorized by the administrative office after they have finished one-third of the limited term or ten years of the term for life" (Article 28).

Provisional release may be cancelled (1) when the persons on parole have committed another offence during the term of the release and have been sentenced to a monetary or heavier penalty, or (2) when they are sentenced to a monetary or heavier penalty because of some other offence committed before the provisional release, or (3) when they were sentenced to a monetary or heavier penalty because of another offence committed before the provisional release and that penalty must now be fulfilled, or (4) when they break the provisional release rules. In this case the rest of the term of sentence must be served.

Juvenile Criminals Article 27 of the Code of Criminal Procedure says, "public suit may not be instituted when the suit is found unnecessary because of the character of the criminal, his age and environment, the condition of his crime and his behaviour after the incident," and leaves the decision as to whether proceedings should be taken to the public procurator. The existing criminal system of Japan is thus inclined to some extent to subjectivism, putting emphasis on the offender himself rather than on the offence. Its evident expression is

found in dealing with young offenders. According to the provisions of the Juvenile Criminal Law, 1922, young boys or girls who are under 18 years of age are called juveniles and their offences are dealt with, not under the penalty system, but by a system of protection. Even when they are punished, the penalty is inflicted in a special way. Protective measures are (1) to give admonitions, (2) to leave them to the guidance of school principals, (3) to let them solemnly declare their sincere repentance in a written statement, (4) to place them, under certain conditions, in the care of their parents, (5) to place them under the care of temples, churches, protective bodies or other proper persons, (6) to hand them over to the care of the juvenile probation officers, (7) to send them to reformatories, (8) to send them to houses of correction, and (9) to put them under proper treatment in hospitals. These measures may be continued till the juveniles reach the age of 23 years. When juveniles are admitted to probation or provisional release they are not put under police supervision as is the case with the adults, but are left to the care of the juvenile probation officers. For the protective disposition of juvenile offenders juvenile courts have been established.

Special Measures for Juveniles Special measures for the penal punishment of juvenile offenders are:

(1) The death penalty or penal servitude for life is not inflicted upon a person who is under 16 when the crime is committed. When the crime is so grave that the death penalty or penal servitude for life should be passed, the sentence is mitigated to penal servitude or imprisonment for 10-15 years.

(2) When a juvenile criminal should be sentenced to penal servitude or imprisonment for more than three years at its maximum, the minimum and the maximum limits are fixed within the scope of the penalty to be inflicted on the crime committed. And when he should be sentenced to a penalty of more than 5 years at its minimum, the term is diminished to 5 years. That is to say, in case of a juvenile convict an indeterminate sentence is admitted.

(3) Juveniles sentenced to penal servitude or imprisonment are put in a special jail or in a section of the common prison secluded from adults. If they reach the age of 18 during the term of confinement they may still be kept secluded till they reach the age of 23.

(4) Juveniles sentenced to penal ser-

vitute or imprisonment can obtain provisional release (a) after 7 years in case of a life-term sentence, (b) after 3 years in case of (1) above mentioned, (c) after serving one-third of the time in case of (2) above.

(5) Juveniles are not sent to work houses.

Second and Habitual Offenders

In case of those who repeat criminal deeds and commit other offences, especially in the case of professional and habitual offenders, it is necessary to put them into confinement for considerable lengths of time in order to give them time to reform their character and at the same time protect society at large from their depravations. To deal with these people Japanese criminal law provides a system of aggravating penalties for the recidivists and admits special dealing with habitual thieves as a complementary system.

Repetitious Offenders (Art. 363, Penal Code) When a person commits another crime and is sentenced to limited penal servitude within five years from the day of release from former penal servitude or from remission of execution of a penalty, he is classified as a second offender. Under the name of repetitious offenders come all second offenders and up. The cases of remission of penal execution are extinction of prescription, special pardon and the case stated in the Penal Code, Art. 5. Amnesty and probation not only remit penal execution, but cancel the effect of the penalty altogether, and the crimes concerned cannot be taken as the basis for forming a repetitious offence. Again, when a person commits a crime during a term of probation the offence for which the probation was admitted is not counted as the first offence. The penalty inflicted on a repetitious offender is aggravated.

Habitual Thieves Habitual offenders are most numerous in burglary and larceny cases. The habitual offenders often regard prison as their residence and repeat crimes immediately after their release, to the great harm of the community, in order to get back "home". They have, therefore, to be separated from society by the infliction of comparatively long sentences. In many cases it has been impossible to increase the penalty, or when it has been increased it has still been too short, and as there is no provision in the existing Penal Code for unlimited imprisonment the Thief Prevention Law was enacted in 1930. According to this law, when persons commit burglary or larceny

habitually by the use of weapons, or by forming a band of more than two, or stealthily breaking into houses by night, they are punished by being sent to penal servitude for more than 2 years in the case of a thief and more than 7 years in that of a burglar. The draft of the revised penal law of 1931 adopts the system of incarceration for unlimited terms for habitual offenders (Draft, Article 91-95).

Peace Preservation

Penalties are imposed as deterrents, but are not always effective, especially in the case of insane people and habitual drunkards, as well as in that of habitual offenders. For that reason it is advisable that, in addition to meting out punishment for any wrong-doings, it should be possible to segregate such people from law-abiding society. To meet this need, most of the countries of the world have a supplementary system of Peace Preservation Laws, which restrict to a certain extent the freedom of released persons as long as their dangerous character is unimproved. In Japan the existing Penal Code makes no provision for such a system, but the draft of 1931 suggests four kinds of peace preservation regulations, namely, preventive surveillance, curative treatment, compulsory labour, and preventive detention.

Surveillance When persons who are defective in mind or body or are deaf-and-dumb are to be sentenced to imprisonment or some heavier penalty, the Court can decide to place them under surveillance. In case the sentence has already been passed for one reason or other, surveillance will follow the execution of the sentence, but in some cases it may be carried out before the commencement of execution or at any time during its course. (draft, Art. 127). Those who are put under this measure are to be kept in the surveillance house and receive treatment for their defectiveness, while being under surveillance. They may be released when further surveillance is found unnecessary by order of the administrative offices. In principle the time of surveillance is 5 years, but this may be renewed by the Court when thought necessary. When the sentence and the surveillance disposition are pronounced at the same time, the Court may choose either one of them or one of the two became unnecessary by the enforcement of the other.

Curative Treatment When drunkards or users of narcotics commit offences while in a state of intoxication or irresponsibility and it is found necessary to

correct them of their bad habits, the Court may order them to be kept in Homes of Correction for a period of 2 years and receive proper curative treatment.

Compulsory Labour When persons who habitually commit crimes because of vagrancy or hatred of labour are to be sentenced, the Court may order compulsory labour together with the regular sentence for a period of 3 years, during which time they are to be kept in compulsory labour houses and compelled to work diligently under strict discipline in order to acquire the good habit of work. The chief official of the labour house may send them to work for the Government or to public or private factories, to farms or other places of labour, allowing them to stay outside the Compulsory Labour Houses, if deemed expedient.

Preventive Detention When the convicts who are to be released at the expiration of a term of penal servitude are found to be addicted to incendiarism or likely to commit murder or burglary, the Court may order them to undergo preventive detention. (draft, Art. 139). They are to be kept in Houses of Prevention and get the treatment necessary for leading them to full repentance. The duration of the treatment is 2 years in principle, but may be prolonged by the Court. This measure is to take effect after the expiration of the regular term of penal servitude. (Draft, Art. 140-142).

Criminal Thought Offence The Communist movement in this country has, since two or three years ago, been heading for its end and ruin on account of various factors, both internal and external, including the enforcement of a strict policy of the Government for rounding of the Communists and the enhancement of the national spirit brought about by the outbreak of the Manchurian Incident. The conditions, however, still remain such that no optimism can be warranted in regard to the future of the Communist movement.

The number of arrests made on charges of violation of the Peace Preservation Law since 1928 has exceeded 30,000 persons. Of these, more than 10,000 persons have been granted a reprieve in their indictment or a stay of execution of this sentence, have served their sentence or have been released on bail. The minds of these men are of divers trends at present; some of them have recanted, others, are of a very ambiguous turn of mind, making it impossible to judge whether they are going to change their minds or not, while still

others seem to embrace rebellious ideas.

It goes without saying that those who have not yet changed their minds are liable to repeat their offence or commit similar ones. Even some of those who have already changed their minds may again commit some offence under the influence of their environment or because of social conditions unless some preventive measures are taken, in view of the fact that "thought" offences are attributable largely to social conditions. It is an urgent need, therefore, under the current situation both at home and abroad, that a prudential policy should be established for the termination of the rebellious movement by preventing repetition of similar offences in the future. The necessity is keenly felt for the establishment of adequate facilities to encourage those who have not yet changed their minds or who have changed their minds only partially to effect a complete change and at the same time enable those whose minds have been completely changed to lead a legitimate and orderly life no matter how social conditions may change in the future. It is in this necessity that the reason is found for the adoption of the protection and surveillance system.

Protection and Surveillance System
The new rule which involves the creation of protection and surveillance stations and the establishment of a protection and surveillance commission is aimed at protecting persons who have once committed "thought" offences and preventing them from repeating the crime. It not only calls for placing old offenders under surveillance, but aims at giving them positive guidance in order that they will not commit similar offences and will walk in the path of rectitude. This positive nature of the new system is expected to help in bringing about the defeat of Communism and elevating the Japanese spirit through encouraging those on the way of changing their minds to forge ahead, and assisting those who have already done so to earn a living. It constitutes an important link in the national "thought" defence line on the strength of its mission towards the preservation of peace and public order by preventing "thought" offences on one hand and on the other by serving to elevate and clarify the essential spirit of the nation.

Objectives of the New System
The objectives of the protection and surveillance system are limited to persons who have committed offences in the light of the Peace Preservation Law. Offenders of other kinds do not come

within its scope. Only those who have been granted a reprieve in indictment by the public prosecutor, or a stay of execution of their sentence by the law court, or who have been released on bail, or who have served their term, are placed under protection and surveillance. The invocation of this rule, however, must be made with the approval of the Protection and Surveillance Commission which is under the control of the Minister of Justice, and in such cases where the commission adopts a resolution against the invocation, the rule cannot be invoked.

Organs and Procedure
The new system is enforced through the operation of 22 protection and surveillance stations throughout the country and a protection and surveillance commission. These stations are independent offices and are located in Tokyo, Yokohama, Mito, Mayebashi, Shizuoka, Nagano, Niigata, Osaka, Kyoto, Kobe, Takamatsu, Nagoya, Kanazawa, Hiroshima, Okayama, Fukuoka, Kumamoto, Sendai, Akita, Aomori, Sapporo and Hakodate and their staffs are composed of guiding officials, protecting officials and secretaries.

The guiding officials take charge of directing and supervising the protection and surveillance business and as such may be regarded as the central machinery of the protection and surveillance stations. The protecting officials conduct the enquiry and surveillance business under instructions from the station masters, who are selected from among the guiding officials. There are at present 33 whole-time protecting officials over all the country and the Minister of Justice may commission other suitable persons as part-time officials.

The protection and surveillance stations are to be notified by the authorities concerned when some "thought" offenders have been granted a reprieve in indictment, a stay of execution of their sentence, have been released on bail, or have left prison after serving their term. Upon receipt of such a notification, the station concerned must immediately institute an investigation into the career, environment, mental and physical condition, and changes in thought and other relative affairs of the person in question. In the investigation, special attention should be given to ascertaining whether the person in question has changed his mind or not and if so, the motive and extent of the change as well as the character and financial and family conditions of his guardian and whether there is any prospect of the person in question earning a living in

the future.

If the results of the investigation lead to a decision to place the person under protection and surveillance, the station concerned is to refer the matter to the protection and surveillance commission which must then pass a judgment. The station cannot place any person under protection and surveillance until it has received a notification from the commission that its decision has been approved.

Methods of Effecting the Protection and Surveillance
There are three different methods for effecting the protection and surveillance. One is that the protecting officials concerned keep a personal surveillance over the person in question, another is to hand the person over to his guardian. In the third method, the person is put in the charge of some protective organization, temple, shrine, church, hospital, etc. In all the three cases, the station authorities concerned must explain to the person in question the significance of the decision to place him under protection and surveillance and caution him about his future conduct.

According to circumstances, two or even three methods may be employed simultaneously. The authorities concerned may also put restrictions on the abode, intercourse and correspondence of the protected if such a measure is deemed necessary or advisable.

The period of protection and surveillance is fixed at two years but it may be shortened or prolonged. Prolongation of the period, however, requires the approval of the protection and surveillance commission.

As already stated, the protection and surveillance system has, as its primary aim, the encouragement of "thought" offenders to change their minds and the assistance of those who have changed their minds in securing a living. It therefore is natural that adequate measures should be taken to guide such persons properly in thought and help them to enjoy life.

In view of the specific nature of "thought" offenders, the authorities follow a principle of respecting their social conscience and conception of justice while encouraging them to master the Japanese spirit. As a stable living has a close bearing upon the perpetuation of the change in mind, efforts are also made to secure suitable positions for persons under protection and surveillance and to assist them in making their own homes and appreciating the beautiful points of the Japanese family system. Facilities for attendance at school are also provided in some cases.

The adoption of the above system constitutes an epoch-making event in the history of criminal administration in this country in that it has extended the scope of state protection and assistance from juvenile offenders to some adults. It has long been a loud cry that the enterprises for aiding ex-convicts and persons under specified circumstances should not be left to the hands of charitably disposed civilian organizations and individuals alone but that the State should share the responsibility with society. The enforcement of the new rule forms an official action which recognizes the legitimacy of the contention.

It is considered a natural conclusion that this system will eventually lead to legislation recognizing that general activities in protecting and aiding discharged prisoners should be in the nature of State enterprise.

There has been another claim in this connection, that the management of this kind of public enterprise should be rationalized and expanded in scope, and that closer relations should be established between the enterprises and the law courts, public procurators, prisons, police and employment offices as well as local communities. This demand, it is to be noted, has also been partially met by the inauguration of the protection and surveillance system for "thought" offenders.

Thus, the new system is expected to help in promoting the progress of the enterprises for protecting and aiding discharged prisoners and in facilitating the fulfilment of the mission of such enterprises in preventing crime.

Criminal Compensation System

A nation has the responsibility of compensating innocent persons who have been wrongfully punished or have been kept in detention during trial. The Criminal Compensation Law was enacted in 1931. Cases to be compensated according to the Law are as follows:

(1) When a verdict of "not guilty" or an acquittal has been given by the examining judge to a person who has been kept in detention, the State makes compensation for the loss caused by the detention.

(2) In case a verdict of "guilty" is reversed by a higher court and the accused has already suffered the execution of the penalty or was kept in detention before the execution, the State makes compensation for the loss caused by the penalty or detention.

When the accused is dead, the bereaved get the compensation. The be-

reaved in the terms of the Law are meant to be the spouse, children, grandchildren, parents, grandparents and those whose names were in the same census registration at the time of the death of the accused.

As compensation for unlawful arrest or detention, a sum of less than 5 yen is paid against the warrant of arrest or for each day of detention after the arrest or for each day of detention after the execution of the warrant of detention.

As compensation for penal servitude, imprisonment, or detention, a sum of less than 5 yen is paid for each day of the whole period. The same rule applies to detention before the execution of the death penalty.

As compensation to the bereaved of a person who has mistakenly suffered the death penalty, a sum of money considered reasonable by the Court is given in addition to the compensation for detention.

As compensation for a monetary penalty or fine wrongly imposed, the amount of money corresponding to that of the monetary penalty or fine already paid is given back. In case a person was unable to pay the amount imposed and in lieu was kept in a Labour House, a sum of 5 yen for each day of detention is paid as compensation.

Claims for compensation should be made to the Court returning the verdict of "not guilty", or to the Court in which the examining judge pronounced the acquittal.

A Survey on Crimes The number of criminal code offences, first instance, was from 100,000 to 110,000 in the early part of the Taisho Era (1912-1917), but began to lessen in 1920 and stayed between the 80,000 and 90,000 mark for years. In 1933, it began to increase again and went over the 120,000 mark in 1934, the record high since 1912. The proportion to population was, on the average, 20 in every 10,000 in the early part of the Taisho Era, 16 in 1920 and 17.66 in 1934.

Comparing crimes in 1912-1915 with those in 1930-1933 the largest number pertained to gambling and lotteries, but these lessened from 10 to 7 in every 10,000 of population, those of theft from 4 to 3, of fraud from 2 to 1, and of usurpation from 1 to 0.4. On the contrary, the proportionate number of inflicting injuries increased from 1 to 1.4 and that of the unintentional inflicting of injuries from 0.1 to 0.8. Those of murder, burglary or incendiarism kept 0.1 in both periods.

In 1934 the total number of convic-

tions in Japan proper was 120,854, of which gambling and lottery accounted for 59,145 or 48.9 per cent, theft for 21,748 or 18 per cent, inflicting injuries 10,299 or 8.5 per cent, fraud and threat 7,416 or 6.1 per cent, unintentionally inflicting injuries 6,226 or 5.2 per cent, usurpation 2,974 or 2.5 per cent, murder 1,041 or 0.86 per cent, incendiarism 935 or 0.77 per cent, and burglary 797 or 0.65 per cent.

When divided into crimes committed in city areas and those in country areas, the number of the former was 90,162 or 41.65 in every 10,000 of city population and that of the latter was 30,692 or 6.59 in every 10,000 of the country population.

Taking totals according to prefectures, Tokyo prefecture led others with 17,878, Osaka came next with 10,454, Hyogo 7,654, Aichi 5,749, Hokkaido 5,363 and Fukuoka 5,211. All other prefectures had less than 5,000 each, those which had less than 1,000 were Okinawa 472, Yamagata 634, Tottori 677, Ishikawa 680, Shimané 782, Miyazaki 790, Tokushima 820, Iwaté 863, Fukui 985 and Miyagi 996.

In proportion to every 10,000 of population in prefectures Tokyo again led with 29.11, followed by Kanagawa 27.80, Hyogo 27.35, Okayama 27.02, Osaka 26.66, Oita 25.34, Kyoto 24.77, Nara 24.77, Nara 24.22, Wakayama 22.69, Aichi 20.80, Hiroshima 20.30, and Yamagata came last with 5.05.

In proportion to every 10,000 of population in prefectures, according to the kinds of crimes, in gambling and lottery Kanagawa headed the list with 18.4 followed by Nara, Tokyo, Hyogo, Ota, Wakayama, Osaka, Kyoto, Okayama, Mie and Chiba, all exceeding 10. Kagoshima had the smallest number with 1.18. In general the districts around Tokyo and Osaka had the highest proportions while Tohoku (north-east) and Kyushu had the lowest proportions. In theft Osaka came first with 7.36, next came Tokyo with 7 followed by Kyoto, Aichi, Hyogo, Fukuoka, ending with Akita's 0.76. In this crime Tohoku districts had the least number again. In inflicting injuries Okayama was the highest with 3.87 followed by Ehime, Hyogo, Yamanashi, etc., Nagano being the lowest with 0.57. In fraud and threat Kyoto came first with 2.33 and Okinawa was the last with 0.41. In unintentionally inflicting injuries Kanagawa came first with 1.90 followed by Tokyo, Kyoto, Osaka, Hyogo and other prefectures and Yamaguchi ended the list with 0.15. In usurpation the first was Okayama with 1.45

and the last was Kagoshima with 0.2. In murder Fukuoka came first with 0.32 and Aomori, Ishikawa and Miyagi came last 0.5 each. In incendiarism Akita came first with 0.37 and Kyoto came last with 0.04. In burglary Tokyo

and Kanagawa headed the list with 0.25 each and Kochi closed it with 0.01.

Statistics

The following are the statistics relevant to the judicature of the country:

I. NUMBER OF COURTS (June, 1936)

Supreme Court	Courts of Appeal	Local Courts	Branch Courts	District Courts	Branch Offices
1	Tokyo	11	17	64	413
	Osaka	9	12	43	277
	Nagoya	6	9	30	203
	Hiroshima	6	13	36	252
	Nagasaki	8	17	53	284
	Miyagi	6	16	36	228
	Sapporo	5	3	20	96
Total	1	7	51	87	282
					1,752

Number of Civil Cases handled at Courts in 1935

Courts	Total	New	Settled
District Courts	1,344,272	1,268,070	1,274,540
Local Courts	107,439	76,809	77,902
Court of Appeal	10,857	5,184	5,722
The Supreme Court	5,855	4,608	3,104

Number of Criminal Cases handled in 1931-1935

	No. of Accused	Preliminary Examinations	Cases of First Instance	Cases of Second Instance	Cases of Third Instance
1931	440,577	6,317	101,799	6,778	2,152
1932	457,285	6,676	101,402	7,374	2,257
1933	509,355	7,737	113,939	7,814	2,493
1934	545,360	7,660	123,488	7,301	2,270
1935	524,358	6,920	121,064	8,278	2,364

Criminals Sentenced in the First Instance, Japan Proper

	Total	Death Penalty	Penal Servitude		Imprisonment		Monetary Penalties	Custody	Fines
			For Life	For Limited Terms	For Life	For Limited Terms			
1931	98,431	31	59	33,396	—	117	58,746	1	6,081
1932	93,186	37	62	36,190	—	81	50,427	1	6,388
1933	107,318	26	42	39,365	—	91	59,849	—	7,945
1934	122,330	28	72	42,318	—	84	69,211	—	10,617
1935	121,662	31	51	42,335	—	116	69,905	—	9,224

Classified by Crimes, 1935

	Total	Death Penalty	Penal Servitude		Imprisonment		Monetary Penalties	Custody	Fines
			For Life	For Limited Terms	For Life	For Limited Terms			
Against the execution of official duties	175	—	—	104	—	19	52	—	—
Riots	44	—	—	17	—	—	27	—	—
Incendiarism	875	1	—	873	—	—	1	—	—

	Total	Death Penalty	Penal Servitude		Imprisonment		Monetary Penalties	Custody	Fines
			For Life	For Limited Terms	For Life	For Limited Terms			
Fires through negligence	1,947	—	—	—	—	—	1,947	—	—
House-breaking	1,352	—	—	228	—	—	1,124	—	—
Forgery of currency	276	—	—	273	—	—	1	—	2
Forgery of documents	738	—	—	459	—	1	278	—	—
Forgery of seals	19	—	—	19	—	—	—	—	—
False accusations	184	—	—	184	—	—	—	—	—
Sexual crimes	927	—	1	362	—	—	480	—	84
Gambling	60,374	—	—	1,913	—	—	50,982	—	7,479
Religious crimes	55	—	—	32	—	—	15	—	8
Malversation	1,499	—	—	753	—	—	746	—	—
Murder	815	5	16	794	—	—	—	—	—
Infanticide	109	1	—	108	—	—	—	—	—
Inflicting injury	10,272	—	1	1,972	—	—	6,864	—	1,435
Inflicting injury by negligence	6,572	—	—	—	—	93	6,475	—	4
Criminal abortion	249	—	—	249	—	—	—	—	—
Kidnapping and abduction	198	—	—	198	—	—	—	—	—
Defamation	122	—	—	4	—	2	99	—	17
Theft	19,936	—	—	19,936	—	—	—	—	—
Burglary	802	23	33	746	—	—	—	—	—
Fraud and blackmail	9,099	—	—	9,081	—	—	18	—	—
Usurpation	3,169	—	—	2,847	—	—	149	—	173
Receiving stolen property	708	—	—	708	—	—	—	—	—
Destruction and concealment of another man's property	101	—	—	42	—	—	37	—	22
Others	1,045	1	—	433	—	1	610	—	—
Total	121,662	31	51	42,335	—	116	69,905	—	9,224

Chosen (Korea)

	Total	Death Penalty	Penal Servitude		Imprisonment		Monetary Penalties	Custody	Fines
			For Life	For Limited Terms	For Life	For Limited Terms			
1931	16,751	15	25	9,921	—	21	5,475	—	1,294
1932	17,068	32	20	11,197	—	9	4,550	—	1,260
1933	16,786	44	26	10,740	—	27	4,731	5	1,213
1934	17,945	21	21	11,254	—	12	5,275	—	1,362
1935	18,713	20	17	11,119	—	25	5,828	2	1,702

Taiwan (Formosa)

	Total	Death Penalty	Penal Servitude		Imprisonment		Monetary Penalties	Custody	Fines
			For Life	For Limited Terms	For Life	For Limited Terms			
1931	24,757	2	1	2,703	—	8	9,322	2	12,719
1932	27,297	—	2	2,863	—	7	11,084	—	13,341
1933	28,681	6	3	2,613	—	5	11,112	2	14,940
1934	28,543	6	9	2,679	—	2	10,687	1	15,159
1935	30,566	1	2	2,643	—	1	12,732	2	15,158

Karafuto (Saghalien)

	Total	Death Penalty	Penal Servitude		Imprisonment		Monetary Penalties	Custody	Fines
			For Life	For Limited Terms	For Life	For Limited Terms			
1931	360	—	—	317	—	—	38	—	5
1932	310	—	1	289	—	2	17	—	1
1933	265	—	—	237	—	—	22	—	6
1934	312	1	2	287	—	—	18	—	4
1935	356	—	—	334	—	—	21	—	1

Nanyo (South Seas)

Penal Servitude Imprisonment
(Natives)

	Total	Death Penalty	Penal Servitude		Imprisonment		Monetary Penalties	Custody	Fines
			For Life	For Limited Terms	For Life	For Limited Terms			
1931	159	—	—	77	—	—	69	—	13
1932	136	—	—	88	—	—	42	—	6
1933	196	—	—	108	—	—	78	—	10
1934	275	—	—	141	—	—	110	—	24
1935	269	—	—	146	—	—	94	—	29

CRIMINAL CASES SETTLED IN ALL INSTANCES

(Crimes against Special Laws Included)

	1931	1932	1933	1934	1935
Total	154,394	149,831	181,792	186,668	183,582
Male	145,655	142,042	172,067	174,982	173,789
Female	8,030	7,083	9,027	11,077	9,314
Juridical persons	709	706	698	609	479
First instance					
Guilty,					
Male	136,530	130,389	159,274	164,266	163,934
Female	7,765	6,895	8,834	10,786	9,033
Juridical persons	708	704	696	608	479
Acquittals,					
Male	405	464	429	423	370
Female	41	19	35	30	32
Juridical persons	1	2	2	1	—
Second instance					
Guilty,					
Male	5,723	7,555	7,523	7,268	6,549
Female	157	134	126	209	167
Acquittals,					
Male	284	173	186	164	229
Female	9	3	—	17	11
Third (Final) instance					
Guilty,					
Male	2,696	452	4,631	2,835	2,679
Female	57	32	31	34	67
Acquittals,					
Male	17	9	25	26	28
Female	1	—	1	1	4

II BOYS AND GIRLS DEALT WITH IN JUVENILE COURTS

Year	Number of Persons dealt with	Number of Persons who finished Examination				Total	
		Not Put on Trial	Put under Protective Disposition	Sent to the Public Procurator	Sent to other Courts		
1929	Boys	12,346	7,752	4,227	2	25	12,066
	Girls	1,019	573	409	—	1	983
1930	Boys	12,835	8,328	4,123	3	17	12,411
	Girls	998	565	405	—	—	970
1931	Boys	13,141	8,572	4,218	7	22	12,819
	Girls	1,015	555	429	—	1	985
1932	Boys	13,402	8,478	4,543	1	17	13,039
	Girls	1,154	670	441	—	1	1,112
1933	Boys	16,171	10,841	4,865	—	19	15,725
	Girls	1,201	716	441	—	1	1,158

III NUMBER OF JUVENILES DEALT WITH IN THE HOUSES OF CORRECTION

Year	Persons Received	Number of Persons who left the Houses of Correction						Total	
		Released	Provisional Release	Decision Cancelled or Revised	Abandoned	Died	Sent to Other Houses		Misc.
1929	1,224	43	76	666	66	3	—	9	663
1930	1,252	65	82	745	83	1	—	1	977
1931	1,259	71	65	774	52	1	—	3	966
1932	1,172	71	63	730	54	—	2	7	927
1933	1,061	83	22	676	13	1	—	3	798

PRISON STATISTICS

IV NUMBER OF PRISONS (Dec. 31, 1935)

Prisons	Branches	Total
52	103	155

V NUMBER OF PERSONS KEPT IN PRISON HOUSES AT THE END OF EACH YEAR

	1930	1931	1932	1933	1934	1935	1936 (End of March)	1937
Convicts	41,188	42,253	46,324	49,922	48,904	51,094	51,977	52,171
Accused	127	100	77	109	80	120	47	174
Criminal defendants	4,634	4,642	5,624	6,062	5,273	5,252	4,628	4,303
Detained in the House of Labour	481	505	477	530	572	490	462	541
Infants	7	7	6	4	8	14	9	6
Total	46,437	47,507	52,508	56,627	54,837	56,970	57,123	57,404
(Women in the total)	738	729	779	914	976	915	919	915
Daily average	44,529	47,866	49,570	55,155	54,352	56,167	—	—

VI NUMBER OF CONVICTS IN PRISON AT THE END OF EACH YEAR CLASSIFIED BY AGE

Age	1930	1931	1932	1933	1934	1935
Under 18	735	717	858	918	817	821
Under 20	1,826	1,950	2,059	2,199	2,023	1,956
Over 20	38,627	39,586	43,407	46,805	46,064	48,317
Total	41,188	42,253	46,324	49,922	48,904	51,094

VII YEARLY COMPARISON OF THE NUMBER OF NEW CONVICTS

/ Year	1930	1931	1932	1933	1934	1935
Criminal Code Offences						
Theft	14,807	15,498	17,771	19,259	20,646	18,848
Gambling and lotteries	1,444	1,379	1,144	1,405	1,652	1,838
Fraud and usurpation	5,175	5,441	5,990	6,792	7,372	8,097
Forgery of documents, negotiable securities and seals or stamps	495	484	500	508	451	381
Injury	1,460	1,402	1,561	1,528	1,523	1,494
Receiving stolen articles	303	350	340	516	544	418
Murder	490	558	666	684	709	642
Burglary	673	651	800	757	776	731
Incendiarism	444	613	772	818	758	701
Interference with the execution of official duties	55	97	83	94	94	48
Destruction and concealment of another man's property	14	11	9	18	18	25
Forgery of currency	26	31	50	68	46	24
Abortion	26	39	32	30	44	54
Obscenities, illicit sexual intercourse and bigamy	221	204	243	279	332	287
House-breaking	298	248	282	288	245	249
Perjury	37	38	38	46	43	38
False accusation	10	15	15	12	16	17
Others	438	437	442	442	555	573
Offences against Special Laws						
Criminal law of the army and navy	41	28	46	56	19	42
The forest law	40	37	40	37	43	30
The military service law	18	8	9	12	14	11
The mail and telegraphy law	7	7	5	2	5	—
Others	924	858	971	1,368	1,203	1,034
Police laws and prefectural laws	5,744	5,504	4,478	4,461	4,986	5,520
Total	33,190	33,938	36,287	39,480	42,094	41,093

VIII YEARLY COMPARISON OF THE NUMBER OF NEW CONVICTS ACCORDING TO THE TERM OF SERVITUDE

/ Year	1929	1930	1931	1932	1933	1934	1935
Penal Servitude							
Penal servitude for life	38	43	38	57	61	64	55
Over 15 years	5	20	52	38	56	45	45
Less than 15 years	55	57	58	68	53	63	38
Under 10 years	692	765	760	890	996	963	816
Under 5 years	1,693	1,764	1,723	2,046	2,309	2,300	2,154
" 3 "	2,628	2,719	2,766	3,210	3,685	4,046	3,719
" 2 "	5,244	5,560	5,745	6,840	7,479	8,462	7,640
" 1 year	8,288	9,894	10,668	12,049	13,111	13,651	13,472
" 6 months	3,686	4,390	4,464	4,638	5,033	5,306	5,282
" 3 "	1,641	1,838	1,829	1,560	1,771	1,882	1,970
Total	23,970	27,050	28,103	31,396	34,554	36,782	35,191
Imprisonment							
For life	—	—	—	—	—	—	—
Over 15 years	—	—	—	—	2	—	—
Less than 15 years	—	—	—	—	1	—	—
Under 10 years	—	—	—	—	3	—	—
Under 5 years	—	—	—	—	11	—	—
" 3 "	1	—	—	—	1	—	3
" 2 "	4	5	7	2	1	1	2
" 1 year	2	11	6	3	5	4	5
" 6 months	17	28	54	69	48	40	47
" 3 "	110	316	249	304	368	238	313

Year	1929	1930	1931	1932	1933	1934	1935
Total	134	360	316	378	440	283	370
Detention	5,237	5,765	5,500	4,491	4,458	4,994	8,316
Death penalty	13	15	19	22	28	35	14
Total	29,354	33,190	33,938	36,287	39,480	42,094	41,023

IX YEARLY COMPARISON OF THE NUMBER OF NEW CONVICTS
ACCORDING TO THE KIND OF CRIME .

	1930		1931		1932	
	First Offenders	Recidivists	First Offenders	Recidivists	First Offenders	Recidivists
Theft	6,585	8,222	6,771	8,727	7,950	9,621
Burglary	455	215	436	207	541	248
Gambling and lotteries	931	513	856	523	721	422
Fraud and terrorism	2,133	1,734	2,264	1,861	2,669	1,902
Usurpation	933	375	974	342	1,001	322
Receiving stolen goods	216	87	225	125	229	111
Forgery of currency	19	7	21	10	39	11
Forgery of documents, seals or stamps	391	104	389	95	393	102
Obscenities, illicit sexual intercourse and bigamy	189	32	167	37	196	47
Injury	1,117	341	1,100	302	1,231	329
Murder	423	55	498	49	604	52
Abortion	23	3	34	5	25	7
Sedition	18	—	19	1	39	2
Incendiarism	423	21	567	46	727	45
Others	569	265	578	248	569	259
Offences against special laws	894	117	826	116	917	142
Total	15,319	12,091	15,725	12,694	17,851	13,922

	1933		1934		1935	
	First Offenders	Recidivists	First Offenders	Recidivists	First Offenders	Recidivists
Theft	8,610	10,649	8,148	12,498	7,271	11,377
Burglary	519	215	470	276	471	254
Gambling and lotteries	893	512	1,063	589	1,165	672
Fraud and terrorism	2,917	2,231	3,053	2,543	3,327	2,845
Usurpation	1,203	441	1,269	507	1,361	564
Receiving stolen goods	357	159	399	145	272	145
Forgery of currency	62	6	30	16	13	11
Forgery of documents, seals or stamps	388	120	334	117	297	64
Obscenities, illicit sexual intercourse and bigamy	252	27	293	39	333	45
Injury	1,178	350	1,156	367	1,107	387
Murder	606	73	636	68	560	74
Abortion	24	6	39	5	47	7
Sedition	43	3	9	—	1	—
Incendiarism	771	47	704	54	640	61
Others	582	272	604	291	538	325
Offences against special laws	1,332	145	895	165	636	190
Total	19,737	15,257	19,102	17,680	17,939	17,352

X YEARLY COMPARISON OF THE NUMBER OF NEW PRISONERS

Classes	1930	1931	1932	1933	1934	1935
Convicts	33,190	33,938	36,287	39,480	42,094	41,023
Suspects	16,864	16,635	17,498	17,560	16,744	17,366

Classes	1930	1931	1932	1933	1934	1935
Accused	34,413	33,737	36,533	37,125	39,078	41,226
Kept in the house of labour	7,909	9,658	11,272	10,851	10,747	10,072
Infants (a) born in prison	2	6	4	7	7	7
" (b) taken in with mother	20	26	19	27	39	36
Total	92,407	94,000	101,613	106,519	108,709	109,800

Prison System

Historical Background

A short historical retrospect of our penal system will show that it is only in comparatively modern times that "Imprisonment" became the recognized method for the punishment of crime.

Up till recent times the idea at the root of the Japanese penal system was minatory. In other words, the so-called principle of general prevention by warning the people at large against the commission of crimes by imposing heavy punishments upon criminals was adopted. Accordingly, the punishments were principally capital and corporal and extremely cruel in character. For instance, the Criminal Code of the Yédo Period (1602-1867) recognized the exposing in public of the heads of persons executed; crucifying, burning at the stake and other similar cruel punishments were imposed. In those days the jails were used merely as places of detention for various offenders until their trial, not as places for reforming offenders. Imprisonment was a very unusual form of punishment, for prisons were unknown and imprisonment was not a legal penalty.

Exile and Banishment. Punishments which brought loss of liberty for specified periods to the criminal were exile and banishment. Persons punished with exile were sent to distant islands and places such as Satsuma, islands of the Goto group, Okj, Iki and Amakusa, and there they were forced to work under such miserable conditions that most of them died of starvation. Banishment was a penalty designed to expel persons convicted of crimes from certain fixed areas, and, as the result of the enforcement of this punishment in certain districts industries declined and farms and fields lay waste, giving rise to many social evils such as the increase in the number of ronin (masterless samurai), mushukumono (vagabonds) and other dangerous elements. In 1778, therefore, as a remedial measure, the Tokugawa Shogunate instituted the system of kozan-yékifu (mine labour) and, in 1790, that of ninsokuyoseba (places for the detention of convict-coolies). The system of kozan-

yékifu dealt with vagabonds with no previous convictions. These were sent as coolies to pump water out of the Sado goldmine. In and after 1788, those who had been punished by flogging or branded as ex-convicts by tattoo marks and were homeless or those who, it was feared, might perpetrate crimes in the future were also sent there.

Prototype of Present Prisons. The ninsoku-yoseba were to all intents and purposes the prototype of present day prisons and penal servitude. These places for the detention of convict-coolies were located at Ishikawajima and Tsukudajima in Yédo (Tokyo) and at Kamigo, Ibaraki prefecture, and there vagabonds and those who had been punished by flogging or branded as ex-convicts by tattoo marks were detailed to work as oil pressers or at other kinds of labour for a fixed wage, with the ulterior object of giving them such instruction and training as would fit them to lead the lives of respectable members of society. In and after 1820 those who were punished with banishment heavier than that from the confines of Yédo were put to forced labour for a fixed period of time in lieu of that punishment. Thus the ninsoku-yoseba, which had been instituted as workhouses for vagabonds, were turned into prisons for the reclamation of criminals through ordered life and labour. In its correctional idea ninsokuyoseba was entirely identical with the London "Bridewell," which was established in England in 1550 "to punish, correct, and reform by labour of a diversified nature," and the Amsterdam workhouse (tuchthuis) founded at the end of the 16th century and well known for its motto, "Schrick niet ! ick wreeck geen quaet, maer dwing tot goedt, straf ist myn handt, mar lieflijck myn gemoedt." (Do not fear ! I will not take revenge upon you for your misdeed ; on the contrary, I wish to lead you to good. Although I am rigorous in handling you, my heart is filled with kindness towards you.) In and after 1790 the prisoners detained in the ninsoku-yoseba who behaved well and showed notable signs of penitence were liberated on certain conditions and this may be taken as the

enforcement of provisional release of prisoners for the first time in Japan. When it is remembered that the system of provisional release of prisoners in Europe originated in a favoured release of prisoners from a convicts' colony in Australia in 1791, it is an interesting coincidence that the same system was inaugurated simultaneously both in the West and the East.

Improvement of 1872 In 1871, with a view to carrying out a great improvement in our prison system, the Emperor Meiji despatched the Vice-Director of Prisons, Mr. Jinsai Obara, to Hong Kong and Singapore to inspect and study the prison systems there, and, as a result, the Prison Regulations, the first written law concerning prisons in Japan, were promulgated in 1872. According to the provisions of these regulations, the reclamation and education of the inmates of prisons should be based on love and benevolence. At the beginning of the Regulations, it is stated: "Prison is a place for the incarceration of criminals for chastisement. They are placed there because of love and benevolence towards them and not because of any desire to inflict cruelty upon them; prison is intended for chastising them and not for subjecting them to hardships. Punishment is imposed on them because it is unavoidable and because it is a means of removing evil from the State. The authorities of prisons shall conscientiously observe this principle in treating prisoners." The Regulations were framed on a progressive system and on very advanced lines, but subsequently their operation was suspended for a time, and, in 1881, the Revised Prison Regulations were published. The Regulations were again revised in 1889, and with the revision of the Criminal Code in 1907 the existing Prison Law was enacted and published the following year.

Management of Prisons

Prisons are placed under the control of the Minister of Justice. Prior to 1900 they were under the control of the Minister of Home Affairs, but since that year they have come under the supervision of the Minister of Justice. With the transfer of affairs relating to prisons from the Department of Home Affairs to the Department of Justice, the Bureau of Prisons was established in the latter Department for the administration of matters concerning the execution of sentences, prisons, provisional releases of prisoners, and the identification of criminals by finger-

prints. A director, several secretaries, a hygiene official of the Department, several clerks and three assistant-experts in finger-prints were appointed to conduct the business of the Bureau.

In 1935, there were 52 ordinary prisons, 3 reformatory prisons for minors, and 103 branch-prisons, and 1,215 detention rooms in police headquarters.

The kinds and regular number of prison officials in 1935 were as follows:

Governor	42
Assistant-governors	33
Doctors	135
Chaplains	139
Instructors	31
Industrial work experts	402
Pharmacists	10
Chief warders	454
(including 5 chief wardresses)	
Interpreters	3
Warders	6,580
Wardresses	129
Total	7,962

Prison superintendents are appointed from among officials ranking as governors and assistant-governors by the Minister of Justice, and branch-prison governors from among assistant governors and chief warders.

Classification

In the Japanese prison system there are four kinds of prisons: (1) prisons for those sentenced to penal servitude; (2) prisons for those sentenced to imprisonment; (3) houses of detention for persons destined to spend time in detention, and (4) prisons of confinement for (a) those sentenced to death, (b) those awaiting trial. In view of the different characters of these prisons, they should, in principle, be established independently of one another, and, in the case of their being erected in the same area, they are usually separated. At present, workhouses are not classified as prisons, but are attached to prisons for the sake of convenience.

Treatment of Prisoners

Object of Treatment As to what is the primary and fundamental purpose of punishment by imprisonment, nothing is stated in the Criminal Code or in the Prison Code now in force. Some Japanese jurists are of opinion that punishment must remain in its essence retributive and deterrent, and accordingly a prisoner must be made to expiate his offence by a dull, soulless, and monotonous servitude. But such new scholars of criminal law and penology as Dr.

Yeiichi Makino, Professor of Criminal Law, Tokyo Imperial University, Prof. Kameji Kimura and Dr. Akira Masaki, former Assistant Director, Bureau of Prisons, Department of Justice, interpret it as a form of education and emphasize its socializing effects. Be that as it may, Japanese juridical authorities have for more than ten years endeavoured to reform prisons on the latter principle. On April 4, 1924, Dr. Kisaburo Suzuki, the then Minister of Justice, declared at a meeting of officials connected with prisons and criminal affairs: "The enforcement of punishments warrants in the adoption of such measures as may improve the quality of convicted persons and socialize them as good and law-abiding members of society." Further, at a meeting of the governors of prisons and reformatory prisons for minors, held on October 11, 1927, Kado Hara, the then Minister of Justice, gave the following instructions:

"The object of enforcing punishments on the inmates of prisons is to cause them to reflect on and repent their offences and to turn them into good members of society. There are many and various means of attaining this object, but they are, in the final analysis, to cultivate their character, to give them training for different occupations, and to maintain their health in good condition, while improving the circumstances which constitute the causes of their offences so as to enable them to lead a decent life. In order to realize the end aimed at, therefore, a mere confinement and watching of them is not sufficient; on the contrary, it is necessary to know their individual characteristics and to inquire into and ascertain the motives and causes of their crimes, giving them thereby appropriate treatment."

Classification System Inasmuch as punishment by the restriction of personal liberty is enforced today principally with a view to education, criminals are properly classified according to ages, characteristics, terms of imprisonment, numbers and kinds of offences, and are then confined in different prisons so as to facilitate the enforcement of adequate measures for their education in accordance with their categories and, further, to prevent prisons from becoming breeding-places of crime through mutual contact and contagion as the result of promiscuous confinement of all grades. When it is impossible to distribute them among independent prisons and they are confined in the same area, prisoners are usually classified strictly, and confined separately, according to their categories. There are prisons for

minors at Odawara, Kawagoyé, Himéji, Okazaki, Iwakuni, Kurumé, Morioka, and Hochiojo, and in Hokkaido for the confinement of those under 18 years of age sentenced to penal servitude or imprisonment, prisons for aged persons at Hamamatsu and Yonago and for women at Tochigi, Miyoshi and Miyazu. Further, there are prisons for the confinement of persons sentenced to terms of imprisonment exceeding 10 years at Kosugé, Takamatsu, Hiroshima, Okayama, Miyagi, and Abashiri; the Abashiri agricultural prison is intended for training prisoners as agricultural labourers. At Uraga, located in an old warship anchored off the port, is a branch of the Odawara prison for minors. There juvenile offenders are given training as fishermen, and sometimes engage in coastal and deep-sea fish-vessels or steamers.

In addition to the above-mentioned classified confinement, with a view to proper individualized treatment, they are examined by doctors, alienists, psychologists and educationists to find out their psychopathic idiosyncrasies, hereditary natures, physiological peculiarities, adaptabilities to occupations, educational possibilities, etc. in different prisons previous to their confinement. Further, a "social diagnosis" is made by collecting reports on them from city, town and village offices, police stations, schools, and organizations devoted to their protection in order that they may be suitably classified for treatment.

Progressive System A treatment on the progressive system is accorded to convicts who form the bulk of the inmates of prisons. This treatment aims at leading them to repent and their treatment is graded in proportion to their aspiration and diligence, thereby gradually bringing them to the conditions of ordinary social life. The relaxation of the enforcement of penalties not merely extends the scope of the personal liberty of convicts, but serves to cultivate a sense of responsibility on their part and strengthens their will for self-reclamation. In short, its chief purpose is not to make "good convicts", but to turn them into "good citizens." The treatment in question does not apply to persons who are sentenced to imprisonment for less than 6 months, aged and decrepit persons, and those of unsound mental or physical faculties. Any prisoner committed for the first time is kept in solitary confinement for a certain period of time and a close study is made of him. On the basis of the results he is classified according to character, physical and mental con-

dition, number of convictions, age, nature of crimes, term of service, home, health and thought.

The Four Stages The stages of the progressive treatment are: (1) those under investigation; (2) those in course of correction and training; (3) those in process of improvement; and (4) those who have developed a sense of responsibility. After being subjected to a study of character, convicts are received into the first class to begin with. Those who are accorded this treatment are given fixed marks according to their terms of imprisonment and promotion to higher classes is given only when a sufficient number of marks have been earned by diligence, good conduct, and growth of the sense of responsibility and of the will for self-improvement. Those belonging to the first and second classes are kept in confinement in association, while those belonging to the third class are kept in confinement in association in the day time, but in solitary confinement at night, those belonging to the fourth class are confined in a special room.

The Treatment Governors of prisons may cause convicts in each workshop to elect some from among them to keep the workshop in good order and look after other necessary matters. The elected ones must be popular, trustworthy and belong to the third class. Prisoners belonging to the third class must jointly, once a month, carry out the work of cleaning and sweeping the prison grounds and keeping them in order. Except in cases of special need, prisoners belonging to the fourth class do not undergo physical examination or have their cells searched, and, further, are permitted to talk with one another so long as it does not interfere with the maintenance of discipline. They are also permitted to elect two representatives that they may express their desires to the authorities. These representatives are nominated by the governor of the prison concerned from among several candidates elected by prisoners belonging to the fourth class. Prisoners of the fourth class may be permitted to take walks in a place designated for that purpose in the prison grounds in hours of recess, or hold meetings, take walks in a group, or hold athletic meetings on days free from labour. They give a pledge to the governor, holding themselves responsible for the physical examination of those of their own class, for the search of their cells and keeping them in order, and the maintenance of order among themselves. In case of any one of them

violating the pledge, the privileged treatment will be suspended for some or all of them. Any one of those belonging to the first class who earns more than ¥5.00 for labour may be permitted to use less than one-fifth of the monthly total in buying postage stamps and in other ways that are deemed necessary; any one of those belonging to the second class, less than one-fourth of the monthly total; any one of those belonging to the third class, less than one-third of the monthly total; and any one of those belonging to the fourth class, less than one-half of the monthly total. While those of the first class are not permitted to change the kinds of labour they engage in, those of the second class and up are permitted to do so. Those who have superior skill or high efficiency and belong to the third class are charged with the task of directing industrial work and those who are similarly qualified in the fourth class are given the task of directing and supervising it. Those of the third class who have particularly superior skill and high efficiency are permitted to work for their own profit in time other than working hours, but that time is limited to two hours per day.

Moral Education Prisoners belonging to the first and fourth classes are chiefly given individual moral and religious instruction, while those belonging to the second and third classes receive the same instruction en masse. Listening to music broadcast on the radio and listening to the playing of gramophone records is permitted to those belonging to the second and higher classes. The time for the enjoyment of this privilege is fixed at twice a month for those belonging to the second class, which may be increased to three times and four times for those belonging to the third and fourth classes respectively. The governor may permit members of the third and fourth classes to hold moral cultural meetings, the number of times being limited to once for those belonging to the third class and twice for those belonging to the fourth. Prisoners of the fourth class are permitted to read books or see pictures in the prison library on days free from labour, and may also borrow suitable newspapers and magazines from it. Those of the third and fourth classes may be permitted to play athletic games, the number of times for such amusements being limited to once a month for those of the third and twice for those of the fourth class. While those belonging to the first class

are permitted to interview or send letters only to their relatives and those who are concerned with their protection, those belonging to the second and higher classes are permitted to interview or send letters to those who do not interfere with their moral instruction, besides their relatives. The number of interviews and the number of letters that may be written increase in proportion to advances in class.

Provisions, drinks and other articles for the maintenance of the health of prisoners are uniform and do not differ according to classes. Those belonging to the fourth class are given white garments, are permitted to decorate their cells with flowers or pictures, and are lent table-ware and other sundry articles for common use.

Suspension of Progress In case any prisoner violates the prison regulations, the treatment on the progressive system may be suspended for up to a period of 3 months, but in case it is recognized that there are certain circumstances which have to be taken into consideration before the suspension or in case the prisoner shows signs of sincere penitence the enforcement of the sentence of suspension may be postponed for a fixed period of time. If he further violates the prison regulations during that period, the sentence of suspension will be enforced, but if he passes the said period without any further violation it will not be carried out. Further, in case a prisoner shows marked signs of penitence after the sentence has been delivered, this will be taken into consideration and the sentence repealed in full or in part. In case a prisoner who has been punished with suspension of the treatment again violates the prison regulations, he may be transferred to a lower class according to the circumstances of the case. When a prisoner who has been punished with such degradation shows marked signs of penitence he will be restored to his former category without reckoning his marks.

When any person of the fourth class has served one-third of his term of imprisonment and the prison governor considers him fit for provisional release his case should be reported on to the Minister of Justice. Even one who belongs to lower classes and who has served one-third of his term and shows notable signs of penitence and is considered to be fully adapted to social life may be specifically granted provisional release, subject to the approval of the conference for provisional treatment on the progressive system.

Prison Labour

Paragraph 2 of the Japanese Criminal Code provides: "Any convict sentenced to penal servitude shall be detained in a prison and subjected to a fixed amount of labour." This "fixed amount of labour constitutes prison labour. It is not legally imposed on convicts punished with imprisonment or custody, but its imposition is permitted in case they desire it. Since the institution of the *ninsoku-yoseba* at Ishikawajima hard labour has been recognized as an essential part of the discipline of prisoners, and present-day criminal theory in Japan is opposed to punishment by the restriction of personal liberty without the imposition of hard labour. Accordingly, prison authorities are encouraging industrial work at their own request by prisoners punished with imprisonment or custody.

The Three Systems Industrial work in prisons is managed on three systems, viz.: the public account system, the "made-to-order" system, and the contract system. Under the public account system, a prison itself purchases materials, provides itself with the necessary machinery, implements and tools and makes prisoners manufacture or repair articles or carry on labour under the direction of prison officials, and sells the products. Under the "made-to-order" system, the chief materials are supplied by the outside buyers and prisoners either manufacture or repair articles under the direction of industrial work experts and assistant industrial work experts on the prison staff, and when the articles are either manufactured or repaired the wages of the workers and the cost of requisites in the manufacture or repair are calculated and the prices of the articles fixed by the standard of current prices. The articles are then delivered to the buyers on payment of the account. Under the contract system, applicants have to supply not only materials, machinery, implements and tools, but also experts for the direction of work, a prison only offering the labour of prisoners and receiving their wages in exchange. Under the contract system now in force in Japan, the prison authorities undertake the supply of provisions, etc. to prisoners, as well as undertaking their supervision and selection for work, and nothing like the lease system that was in vogue in South American countries at one time is recognized.

Among the above-mentioned three different systems, the public account system does not permit any third party

other than prison officials to direct prisoners in the prosecution of their work as in the case of the contract system and, moreover, enables the prison authorities to select and impose on prisoners such kinds of work as are suited for their moral instruction and vocational education. In these respects, it is considered to be the most desirable for the enforcement of penological measures and its adoption is greatly encouraged.

Training for Occupations In imposing work on prisoners, the most suitable kinds of work are given them not only by taking into consideration health, economy, terms of imprisonment, ability, occupations in free life, and future means of livelihood, but also by scientifically examining their individual adaptabilities to occupations. Industrial work in prisons is the most suitable means of giving moral instruction to prisoners; in particular, training them in certain lines of work in the course of detention is the best way to prevent them from perpetrating crimes once again. Since 1920, therefore, houses for the training of prisoners for occupations have been erected in different prisons throughout the country and these prisoners have been trained for occupations requiring special skill, such as those of carpenters, joiners, furniture-makers, tin-smiths, plasterers, timber-mill workers, painters, smiths, shoemakers, etc. The term of training is 6 months, during which fundamental theories and practice are taught.

Rewards Given as Favours Working hours are from 12 to 13 hours a day and differ according to months. It is permitted to give educational or moral instruction to prisoners or allow them to take exercise within these hours. A time of recess—15 minutes in the morning and 25 minutes in the afternoon—is given them. All the income from the work of prisoners goes into the national treasury, irrespective of whether it arises from work or from wages. A prisoner who has worked may receive a reward as a favour. This gratuity varies from ¥0.20 to ¥10.00 per month and the sums are fixed according to conduct, character, kinds of work, and the results of the work done. Any one who does particularly superior work is given an additional reward not exceeding ¥10.00. The reward for his work is, in principle, not given a prisoner until he is released from prison, but (1) in case a prisoner is entitled to ¥10.00 a month or more, and the money is needed to support his father, mother, wife, child, or to compensate the sufferer from his crime, or to purchase

books or other necessary articles, one-third of the amount may be given him while in confinement, and (2) in case it is particularly necessary to do so for the sake of a prisoner, the entire reward may be handed over to him, irrespective of its amount and the way of spending it. In case a prisoner has been injured or has fallen sick while at work, and has died in consequence or has become unable to carry on any work, he may be entitled to a pecuniary reward according to the circumstances of the case. This reward is fixed within the limit of from ¥50 to ¥100 according to the details of the case.

The Hito Prisoners are given moral instruction en masse on national holidays, on the first two days of January and the 31st of December, or on Sundays. The same instruction is also given prisoners individually in case it is deemed necessary. It is chiefly given by chaplains appointed from among priests of the Shinshu sect. Adult prisoners who are uneducated and those under age receive an elementary school education. The latter are also given military training, which gives very satisfactory results in the way of moral instruction. Prisoners are permitted to read books and look at maps and pictures, unless it is injurious to the good order of the prison, but writings concerning current topics are forbidden. As, however, it is needful to keep them acquainted with changes in the condition of society, lest they should fall behind the times, a specially edited newspaper, "Hito," (Man) is issued and distributed among them.

Aid of Discharged Prisoners

Criminals come in general from among the poorer people, and when they are released from prisons after the completion of their term they are greatly handicapped in entering into gainful occupations or getting positions in shops or offices, being known as "Zenka-mono" or "former criminals," and dealt with as such by the society, and it becomes difficult for them to earn a livelihood, so that they are forced into further crimes. Of the total number of discharged prisoners the percentage of those who engage in crime a second time within 6 months of their discharge is found to be 43.1, and the percentage of those who commit a crime within another 6 months is 15.4, that is, the percentage of discharged prisoners who commit a crime for the second time within one year is as high as 58.5. For the protection of the discharged prisoners

measures have to be employed for giving moral instruction and a knowledge of some useful arts while providing them with necessary funds so that they may establish themselves in some suitable occupation. These works have been entirely left in the hands of volunteer social workers who have made valuable contributions. But the number of establishments for this purpose is insignificant as compared with the number of the ex-convicts who are in immediate need of protection and the fund contributed by benevolent persons to these protection houses is too insufficient. The trend of times since 1931 is to disregard the need for such social institutions because the attention of the people is drawn to for more important social problems requiring the reconstruction of national life so that little or no attention is paid to the preventive type of social work. Under the circumstances the amount of contributions to institutions for discharged prisoners began to dwindle, while the decreased rate of interest has lessened the income from endowment funds, and to make matters worse, the commodity prices have gone up. The present conditions of protection work for ex-convicts are such that they are far from making any material contribution toward decreasing the percentage of the second or habitual offenders referred to above.

Japan may have achieved much in regard to the efficiency of its prosecutors and the conditions of law courts and prisons, but the country's accomplishments in that direction will not produce full results unless necessary measures are instituted for the protection of ex-convicts. The only governmental measure in this respect is that which pertains to thought offenders which became effective in November, 1935, and known as the Protection and Surveillance Law. The good results so far attained, by the establishment of the protection and surveillance stations and the organization of a special commission for the guidance of released thought offenders, has encouraged the authorities to expand the scope of this work, to include ex-convicts. Plans are under way for launching out protection measures for ex-convicts all over the nation by the promulgation of a law which is long overdue.

The Organizations Among these organizations, one noted for its systematic constitution and management was the Shutsu-gokunin Hogo Kaisha (Ex-Convicts Protection Co.) established by Mr.

Meizen Kinbara in Shizuoka prefecture. In 1907, the Government decided to make an appropriation of ¥10,000 from the national treasury every year for the encouragement of the work and later, in 1912, the sum was increased to ¥30,000. With the development of the work the number of organizations grew and was returned at 211 throughout the country at the end of 1912. In 1913, Baron Hachiroemon Mitsui, head of the House of Mitsui, donated ¥750,000 to the work, and with this money the Hoeset-Kai, a foundation, was established for the control of, and extension of help to, various organizations interested in the work throughout the country. In 1925, the Government subsidy was increased to ¥100,000, and since 1923, the Imperial House has made an annual grant to encourage the work, with the result that the work has made steady development, the organizations today number approximately 800.

The Beneficiaries The persons protected by these organizations are not limited to those who have served the terms of their sentence, but include those who have been provisionally released; those, whose prosecution is suspended; those, the enforcement of whose sentence is suspended; and those who have been released from punishment for minor offences; as well as the members of the families of those who are detained in prisons. The method of protection is roughly classified into (a) quarters and protection, (b) indirect protection, and (c) temporary protection. Those to whom the method (a) is applied are quartered in places specially selected by the above-mentioned organizations and are given board, lodging and clothes as well as employment. Those to whom the method (b) is applied are not directly protected, but visits are paid to their fixed places of residence from time to time so as to give them advice and suggestions. Those to whom the method (c) is applied are given only temporary help at the time of liberation from prisons such as providing them with clothes and other necessities and journey money.

Today, there exists in the Department of Justice the Section for the Protection of Ex-Prisoners which undertakes the direction and supervision of the welfare work of various associations, but as it cannot be expected that a small Section can thoroughly undertake such wide-spread work, it is increasingly advocated in different quarters that a system for the promotion of the welfare of ex-convicts should be

instituted and the work connected therewith conducted by the State.

Police System

Its Fundamentals

There are two aims of the national administration. One is the administration of political affairs for the direct benefit of the nation as a whole, and the other is to protect the public welfare of the individuals who compose the nation. The function of the police is to look after the latter. There is a judicial function of the police that goes side by side with the first one, but the principal significance of the establishment of the police system is in its protection of public welfare. The work it performs can be considered more in a negative aspect than a positive one for it does not promote welfare work so much as it prevents and roots out matters which are, or may be, detrimental to peaceful social life. The police are endowed with authority to enforce the law or to give orders to the people. Police authority forms a part of the sovereign power of the State.

Authority Vested in State In Japan police authority is entirely invested in the State and is not delegated to other public bodies. In European countries, there are commonly the State police and the local police, the latter being under the jurisdiction of local authorities. In Japan all the police come under the direct administration of the State and no chiefs of local governments or local governments themselves have power over them except in a very few limited subjects. The police are administered in the name of the Emperor by the Minister of Home Affairs through the Superintendent-General of the Metropolitan Police, in Tokyo prefecture, governors of other prefectures and the Hokkaido procurator. Although nominally under the Governor of Tokyo prefecture, the Superintendent-General of the Metropolitan Police Board in Tokyo takes his orders direct from the Home Minister as the Board has many political responsibilities unknown in other prefectures. The appointment is actually a political one, the ordinary police business being carried out by the Chief of Police. In the Hokkaido and other prefectures the highest police official is the Chief of the Police Division. Under the Chiefs of Police are the police superintendents, inspectors, assistant inspectors and policemen. A police superintendent is appointed chief of a police station or secretary of a

Police Division, or in Tokyo and Osaka prefectures he may be appointed inspector over several police stations. A police inspector or an assistant police inspector may, in some cases, be appointed chief or secretary of a police station. Policemen are divided into sergeants, indoor and outdoor service men, special service men, and police-detectives.

As mentioned above, police officials carry out judicial functions, and when acting in the capacity of judicial police officials and under the dictates of the public procurators they execute warrants of arrest or detention and arrest persons in flagrant offence. They may seize private possessions or search a house by order of a Court of Justice, an examining judge or a public procurator, or help a public procurator in the investigation of criminal cases.

In Times of Peace and Crisis In times of peace the maintenance of public order rests with the police. Individual policemen wear sabres. Pistols are carried only in special cases though in the police force there are troops of armed constables, while if matters become too serious and on special occasions, the gendarmerie is called on for help. The gendarme is a kind of military policeman, but at such times as the police force is too weak to keep public order, a Governor may ask for the aid of the gendarmerie. Moreover, at a time of crisis or extraordinary social disturbance, the army takes the place of the usual police force and acts with a despotic authority without limitation of the Law. The occasions which may call forth the military power for keeping public order are as follows: (1) when the country or a district is placed under martial law in times of war, (2) when a district is put under martial law for the maintenance of public order, (3) when the governor asks for the help of the army for subduing social disturbances, and (4) when a Divisional Commander recognizes the need of military power for keeping local order in an emergency in which the request from other authorities is too late.

Police Business

Police business in Japan is manifold, and may be classified into 4 main lines and 24 kinds:

Public Peace (a) supervision of publications. The publication of all kinds

of printed matter should be reported and a copy of each must be sent to the authorities. Secret publication is strictly forbidden. A sum of money as guarantee of good faith has to be deposited by the publishers of newspapers or periodicals which deal with political problems. The name of the person responsible for any publication must be printed on the publication. Secret matters which come under the control of the public procurators, the Ministers of War and Marine, and the Minister of Foreign Affairs must not be reported in newspapers or periodicals. The Home Minister may prohibit the publication of a periodical or any other printed matter which he considers detrimental to public welfare and morals.

(b) Supervision and care of public meetings, organization of societies and mass movements. According to the Public Peace Police Law, all public meetings on political questions and some other meetings which come under control of the authorities must be reported to a police-station beforehand. A policeman may be present at such a meeting and may stop a speech or close the meeting. The organization of such associations or societies as may endanger the existing form of Government and system of private property is strictly forbidden. The said P. P. Law inflicts heavy penalties on those who break these regulations.

(c) Supervision of businesses or commercial shops. Most businesses are free, but in some cases some kind of police supervision is necessary in the interests of public welfare, hygiene, prevention of damage, the safety of traffic, and social economy. For instance, such shops and businesses as inns, public baths, employment exchanges for geisha and prostitutes, credit information businesses, barbers, seal or stamp engravers, old clothes dealers, peddlers and stallholders are inspected or taken care of by the police. Pawnshops and curio or second-hand shops are under special regulations and police inspection and supervision is thoroughly practised as many stolen articles find their way into these shops, and lead to excellent results in the arrest of thieves and burglars. Guides, scribes and employment exchanges for profit are also under special regulations and strict supervision.

(d) Religion. It is the duty of the police to prevent the desecration of shrines and breaches of the peace in temple grounds. Superstitions and superstitious actions are prohibited by the Police Penal Law.

(e) Accidents. The police take charge

in cases of fire, flood, explosion, of people being injured, etc. Regulations are issued on the handling of guns and explosives; the wearing of swords or the like is strictly forbidden; the handling or selling of poison is under a special regulation. Sulphur and oil businesses are under police care also. Buildings are under police supervision for their beauty, fire-proofness, and hygiene; factories, warehouses, theatres, and public resorts receive special attention. Crematories, slaughter-houses and incinerators must not be within residential or commercial districts of cities. Regulations regarding buildings are stricter than in Western countries because of the large number of wooden houses liable to fire and the constant fear of earthquakes. Electricity and gas businesses must not endanger the lives of people. Mines are under a special police regulation as they are most liable to fatal accidents. Prevention of floods also comes into the sphere of police business.

For the prevention and extinction of fires, fire-brigades are established in cities under the control of the Chief of the Police Division in the prefecture. In Tokyo prefecture, a fire division is established in the Metropolitan Police Board and firebrigade stations are located in different parts of Tokyo. In the larger cities, Osaka, Kyoto, Yokohama, Kobe and Nagoya special fire-brigade stations are established by the State. In the smaller municipalities fireguilds are established at the expense of local self-governments. The firemen are volunteers and differ from those in the said cities who are officials of the State.

(f) Public morals. The police look after the maintenance of good public manners and morals. Japan has a licensed prostitute system and forbids private prostitution and conniving at it. Through the efforts of Christian and other religious and public bodies and the growth of other means of pleasure, prostitution is growing less, but it is a duty of the police to see that the prostitutes are treated as humanely as possible as long as their term of service exists. All pleasure resorts such as theatres, places of performances, wrestling, movies, etc. are carefully supervised and any obscene or immoral performances prohibited.

Restaurants, dining rooms, bars, cafes and other eating places are under police supervision. The laws for prohibiting liquors and smoking to minors, the prohibition of lotteries, misbehaviour in the street or outdoors, and the regulations regarding street advertisements and the erection of monuments must be

enforced.

(g) The care of men who are a danger to public peace and welfare, juveniles who are addicted to bad habits, ticket-of-leave men, the insane, beggars and vagrants are supervised by the police.

(h) Actions which may harm others such as forcing an interview, extorting contributions, blackmail, causing disturbances, obstruction, etc., are forbidden by the Police Penal Law. Deceitful actions, spreading false reports, and the mishandling of dead bodies come under the care of the police. Obstructing officials in pursuit of their duty is strictly forbidden. The care of lost articles, prohibition of deceitful religious actions, the supervision of "mu-jin-ko" and "tanomoshi-ko" or mutual financing associations come under police power to some extent.

Public Hygiene The problem of the health and hygiene of the people is one of the greatest concerns of the Department of Home Affairs, and in many points the responsibility of looking after such cannot be confined to the police alone, though in its direct management the police have much to do.

(a) Prevention of epidemics. For the prevention of epidemics there are many laws in force, the most important of them being the Epidemic Prevention Law, the Regulation for the Medical Inspection of Aviators, the Seaport Quarantine Law, the Vaccination Law, the Tuberculosis Prevention Law, the Trachoma Prevention Law, the Leprosy Prevention Law, the Venereal Diseases Prevention Law and the Parasites Prevention Law. The water police help in the medical inspection of passengers and goods arriving in vessels from abroad. The annual compulsory cleaning of individual houses and public buildings, drains, wells, dumping grounds, etc. is supervised by the police. When an epidemic breaks out policemen are used to try and confine it to as small an area as possible.

(b) Medical. As the health and welfare of the people depend on proper medical attention, doctors, dentists, midwives, nurses, masseurs and acupuncturists are under special regulations, as also are druggists and pharmacists. Poisonous chemicals are well looked after.

(c) General Health. A law is in force prohibiting the sale of unwholesome food, and utensils for eating, drinking and preparing food are under police supervision. (See Chapter XXXII.)

Traffic Police (a) Road. The police are responsible for safety on the streets. "Walk and drive on the left" is the

rule of the road in Japan.

(b) Vehicles. Railroads, electric cars, automobiles, trucks, waggons, rikishas, bicycles, etc. are under police supervision.

(c) Water police. The water police look after foreign-going vessels entering and leaving open ports, navigation in closed ports, rivers and lakes, and the business of steamship companies doing a coastal trade.

(d) Ocean navigation has many international ramifications and though there are countless matters which ought to come under police supervision it is separated from common police business and put under the administration of the Department of Communications.

(e) The aviation police are put under the management of the Minister of Communications.

(f) Colonial police come under the control of the Minister of Overseas Affairs except in some cases which may come under the supervision of local governments.

Police and the People

The function of the State, as far as it concerns the economic life of the people is largely protective and administrative and certain laws and ordinances of the State have to be imposed on various businesses in order that the people shall be fully protected. The police work by orders from higher authorities at the request of the Ministers of Agriculture and Forestry, Commerce and Industry, and Finance.

(a) Banks, savings banks, mutual financing associations, negotiable security businesses, trust businesses, insurance businesses, commercial exchanges, the central wholesale markets in the six largest cities, foreign trade business in important articles, weighing and measuring machine businesses, and auditors partially are under police supervision or limitations.

(b) Agriculture is supervised by the police in such matters as the prevention of the spread of noxious insects, the control of plants imported or exported, the fertilizer industry, agricultural warehouses, the sericulture industry and the control of rice imports and exports.

(c) The hygiene and prevention of epidemics among domestic animals is looked after by the police. Many laws are enforced regarding the improvement of animals, and police power is needed for a proper practice of them, especially in connection with horse-racing.

(d) Forestry police mainly prevent damage to the forests.

(e) Fishery police protect the pro-

pagation of aquatic animals and at the same time look after the safety of the fishermen. There are many laws and regulations on fisheries, whale-fishing, fishing boats, etc.

(f) The hunting of beasts and birds is limited to those mentioned in the revised Game Laws of 1918, the seasons and districts of hunting are put under police regulation.

(g) For the protection of labourers

there are numerous laws in force, for instance, the Factory Law, Laws on the limitation of age of factory or marine workers, the Labour Accident Prevention Law, the Mine Law, and the Ordinance regarding the enlistment of workers. Policemen either help factory or mine inspectors or directly handle matters mentioned in these laws. Labour movements and disputes call for the use of police power frequently.

POLICE STATISTICS

	1932	1933	1934	1935
Police offices:				
Police stations	1,209	1,199	1,200	1,201
Water-Police stations	23	24	24	24
Branch stations	4,421	4,551	4,644	4,672
Police-boxes	14,292	14,056	14,147	14,240
Police officials:				
Police superintendents	317	339	339	346
Police inspectors	1,642	1,632	1,632	1,632
Assistant police inspectors	3,568	3,604	3,627	3,661
Policemen	62,256	63,439	63,974	60,887
Total	64,267	65,462	65,997	66,526
Fire-brigade stations	217	218	228	232
Fire-brigade officials	3,789	3,812	3,873	3,893
Firemen	12,674	12,674	12,559	12,486
Total	16,030	16,486	16,432	16,379
Fire-guilds	10,963	11,211	11,362	11,446
Volunteer firemen	1,981,592	2,035,491	2,087,907	2,105,874
Criminal cases handled by police:				
Cases reported	2,210,465	2,713,729	2,925,557	—
Persons arrested	2,161,255	2,665,497	2,893,135	—
Suicides:				
Successful, men	11,250	10,945	10,860	—
women	6,499	6,582	6,379	—
Unsuccessful, men	2,733	3,945	3,944	—
women	2,152	2,758	2,765	—
Murder, Manslaughter, etc.	1,416	1,439	1,692	—
Traffic accidents:				
Cases	71,221	68,823	69,342	66,415
Killed	2,801	2,572	3,226	3,549
Wounded	49,250	46,338	50,204	49,227
Places of Entertainment:				
Theatres, buildings	—	1,878	1,899	1,898
Performances	—	33,217	31,967	31,593
Cinemas, buildings	—	1,459	1,458	1,508
Shows	—	76,118	78,497	82,540
Variety houses	—	587	526	507
Performances	—	16,302	16,063	16,037
Miscellaneous shows	—	59	65	73
Performances	—	12,544	12,444	11,689
Shops and houses under police supervision:				
(Items less than 10,000 are omitted)				
Pawn shops	13,628	13,300	12,738	12,585
Dealers in second-hand articles	261,969	270,968	283,873	294,297
Hotels	50,186	49,552	48,851	48,676
Boarding houses	10,290	10,436	10,902	11,916
Doss-houses	14,451	14,442	13,959	13,954

	1932	1933	1934	1935
Restaurants	61,261	63,084	61,349	61,107
Cafés and bars	30,598	35,200	37,056	36,202
Geisha houses	21,040	20,949	21,197	21,612
Bath-houses	21,743	22,235	21,701	21,391
Eating houses	159,393	159,340	159,823	156,211
Employment exchanges	12,403	12,879	11,736	11,175
Printing houses	13,616	13,705	14,162	14,860
Barber's shops	74,051	74,694	74,687	75,944
Women's hair-dressers	57,764	55,095	53,314	51,154
Recreation houses	21,623	20,398	20,683	22,794
Building contractors	28,969	31,125	36,179	28,823
Shipping agents	11,448	11,839	12,250	12,307
Waggon-business men	143,788	149,446	148,881	142,977
Taxicab garages	20,776	23,381	27,898	28,072
Scribes	18,079	18,640	18,977	18,440
Bicycle dealers	36,664	37,676	39,545	40,850
Rikishamen	25,133	20,468	17,346	14,928
Factories	68,435	74,701	82,412	90,065
Licensed prostitution houses	10,500	10,281	9,738	9,528
Geisha girls, etc.				
Geisha	74,999	74,200	72,538	74,855
" Saké " waitresses	85,951	85,590	85,121	82,621
Café and bar waitresses	89,549	99,312	107,478	109,335
Prostitutes	51,557	49,302	45,705	45,837
Cinema films, inspected:				
Total number of metres,	17,377,332	16,198,963	18,223,908	20,029,002
Japanese	14,987,834	13,722,236	15,322,117	16,651,611
American	1,956,674	2,035,822	2,278,121	2,431,976
European	432,824	440,905	623,670	945,305
Natural calamities and fires				
Flood:				
Municipalities struck	4,856	3,607	6,325	—
Flooded areas (ha.)	1,299,577	215,063	249,591	—
Buildings damaged	15,696	305	386,334	—
Boats lost	543	136	5,887	—
Persons drowned	151	18	973	—
Persons injured	476	22	5,529	—
Damages in yen	48,249,662	9,332,576	389,777,809	—
Tidal waves:				
Municipalities struck	171	489	333	—
Buildings damaged	790	19,974	6,034	—
Boats lost	358	11,266	2,107	—
Persons drowned	—	2,848	127	—
Persons injured	3	1,146	958	—
Damages in yen	295,616	19,943,549	4,580,944	—
Typhoons:				
Buildings damaged	19,255	19,867	42,763	—
Persons killed	103	67	201	—
Persons injured	170	83	786	—
Damages in yen	16,537,350	7,604,146	75,649,789	—
Fires:				
Number of fires	18,501	19,380	20,481	—
Dwellings damaged	18,007	12,488	23,717	—
Other buildings damaged	13,116	10,864	14,112	—
Damages in yen	60,539,000	34,935,000	171,922,000	—

CHAPTER XXVIII

EDUCATION

Historical Background

Chinese letters and Confucian books were first introduced to Japan in the third century, and it was then that the civilization of the country made a real start. From the nearby peninsula of Korea came sericulture, weaving, brewing, and the art of the blacksmith. It was about his time that the Imperial Prince Wakaratsuko established a Court School.

In the sixth century Buddhism came to the Island Empire to give added material progress to the Japanese civilization, and in 607 the Imperial Prince Shotoku-taishi (see Chapter III) caused the Horyuji Temple to be built at Nara and there he established a school in the temple. These were the earliest schools of Japan.

In the latter half of the seventh century a college in the capital and some provincial schools were established to educate officials, according to the Taiho Laws. Later, in the Heian Age, the courses of study became encyclopaedic and both public and private schools were established. In the Muromachi Age school education suffered a decline and only two places of study were recorded, namely, the Kanazawa Library and Ashikaga School, although there might have been private lecture halls kept secretly by scribes and Buddhist monks.

The Tokugawa Shogunate encouraged the study of Confucianism and several schools of this moral system and Chinese philosophy were introduced, and education extended to the common people. There were established many schools; the highest one was called the Shohéi Hill Academy or Shohéi School, which was established by the Shogunate. The central government had many other schools, while each local clan government also had its own schools. In addition to these, private schools and "téra-koya" appeared all over the country for the education of the people in general.

"Téra-Koya" Education

The "téra-koya" needs some special explanation, as it played the most important part in the education of the

masses before the Meiji Era, and laid the foundation for the remarkable progress of elementary education in new Japan.

The word "téra" means Buddhist temple and "koya" children's house, so the téra-koya was a school for children established by a Buddhist temple. It was originated many years before the time of the Tokugawa Shogunate by Buddhist monks. Side by side with Governmental schools for the samurai class, téra-koya education began to spread in the Yedo age among the common folks in business and farm quarters. It gradually ceased to be entirely in the hands of the monks, and assumed a form and nature quite different from the original.

The school-house was no longer in or attached to a temple; teaching was not restricted to the monks; the teacher might be a samurai, monk, doctor or Shinto priest. "Téra-koya" became merely a general name, and the founders téra-koya schools chose any name they liked for their own. The size of the schools was diverse, the largest one accommodating as many as two or three hundred pupils. There was rarely more than one teacher, but in the larger schools there might be an assistant. The age of the pupils ranged from 6 to 15 years. It was co-education, although the sexes sat apart. The courses of study were commonly penmanship, Japanese literature, and the use of the abacus, with such optional subjects as Chinese literature, poem composition, sewing, flower-arrangement or tea ceremonies. Many textbooks on moral precepts and letter writing were published and used in these schools. These schools were usually kept up largely out of the pocket of the school master himself, for his work was entirely voluntary, inspired by pure devotion to service, for which he gained the honour and respect of the community. According to the report of the Department of Education, there were 15,662 téra-koya in Japan at the beginning of the Meiji Era, or just before the establishment of the new elementary school system.

It must be remembered also that technical schools had made considerable progress in old Japan. Medical schools

in particular were established in the Taiho Era, and medical science made steady progress toward the middle of the Yedo Age. The Tokugawa Shogunate established a medical school in 1765, and local clan lords followed this example. There were several private ones well known to the people. But these taught the Chinese method of the science, and the "materia medica" was almost entirely of herbs and animal matter. The modern or Western medical and its system and practice were introduced through Dutchmen at the end of the Yedo Era, so we may say that medical science was the earliest of all the sciences that were learned by the Japanese people from the Westerners.

Educational Administration

The present educational system of Japan dates from 1872 the 5th year of Meiji, when elementary education was made compulsory. The new system was established, in the main, after the examples of the French system, and the entire country was divided into 7 university districts, each of them consisting of 32 middle school districts and each of which was again divided into 210 primary school districts, or one primary school for 600 of population. The national educational principles are stated in the Imperial Rescript on Education issued on Oct. 30, 1890. This world-renowned rescript was published to lay down leading ideas and principles for the guidance of the Japanese, and it reads as follows:

"Know ye, Our Subjects!

Our Imperial Ancestors have founded Our Empire on a basis broad and everlasting and have deeply and firmly implanted virtue; Our subjects, ever united in loyalty and filial piety, have from generation to generation illustrated the beauty thereof. This is the glory of the fundamental character of Our Empire, and herein also lies the source of Our education. Ye, Our subjects, be filial to your parents, affectionate to your brothers and sisters; as husbands and wives be harmonious, as friends true; bear yourselves in modesty and moderation; extend your benevolence to all; pursue learning and cultivate arts, and thereby develop your intellectual faculties and perfect your moral powers; furthermore, advance the public good and promote common interests; always respect the Constitution and observe the laws; should any emergency arise,

offer yourselves courageously to the State; and thus guard and maintain the prosperity of Our Imperial Throne, coeval with heaven and earth. So shall ye not only be Our good and faithful subjects, but render illustrious the best traditions of your forefathers.

The way here set forth is indeed the teaching bequeathed by Our Imperial Ancestors, to be observed alike by Their Descendants and subjects, infallible for all ages and true in all places. It is Our wish to lay it to heart in all reverence, in common with you, Our subjects, that we may all thus attain to the same virtue."

The 30th day of the 10th month of the 23rd year of Meiji.
(Imperial Sign Manual)
(Imperial Seal)

All school education in Japan is supervised by the State, being partly entrusted to local public bodies such as the prefectural councils, towns and villages.

Private individuals are also allowed to found schools and universities, although here too the Government does not give much latitude of method or scope, and the uniformity of school education in all parts of the Empire has worked well in bringing the degree of advancement in modern ways and thought to almost the same level throughout the land, and greatly strengthening the national spirit and unity of the people.

The points entrusted to local public bodies are chiefly financial matters, pertaining to the establishment and maintenance of schools, some of which are obligatory while some are left to the discretion of local bodies. The obligatory matters are the establishment by Hokkaido and the prefectures of normal schools, middle schools for boys and girls, schools for the blind and for the deaf-and-dumb, technical schools by order of the Minister of Education, and that of ordinary elementary schools by cities, towns and villages. Municipalities may not establish higher normal schools, and Hokkaido and the prefectures alone are authorized to establish universities, higher schools and normal schools.

The main principles regarding the nature and objects of schools, their scholastic terms, curricula, organizations, entrance qualifications, qualifications for the teachers, equipment, means of meeting the expenditure, and tuition fees are prescribed by Imperial Ordinances. The establishment of schools

by public bodies or private individuals must be approved by the local supervising authorities, which also exercise control to a certain extent over their methods of education and finances.

Religion is, on principle, excluded from the educational agenda of schools. In all schools established by the Government and local public bodies, and in private schools whose curricula are regulated by laws and ordinances, it is forbidden to give religious instruction or to hold religious ceremonies either in or out of the regular curricula.

Education in the colonies comes under the control of the colonial governments, and the military schools belong to the War and the Navy Departments, while there are some technical schools which come under the supervision of other departments. But with these exceptions, it may be safely said that the Minister of Education has charge of all matters relating not only to school education, but also to what may be termed social education, such as art, science, literature and religion. He is assisted by the parliamentary councillor in the conduct of political affairs and in matters which are connected with the business of the Imperial Diet. The vice-minister assists him in the business part of the Department.

Of the affairs within the jurisdiction of the Department, those that are related to education, art, science, and literature are distributed respectively among the Bureaux of Higher Education, General Education, Technical Education, Social Education, School Books, and Student Control, and those pertaining to religion are under the direction of the Bureau of Religion. Those affairs which do not properly belong to any one of these bureaux are dealt with in the Minister's Secretariat. In addition there are school superintendents, who inspect schools and directly supervise educational affairs; supervisors of social education who direct and supervise social educational affairs; superintendents of compilation who compile and examine text-books; and supervisors of school hygiene who look after the sanitary conditions of schools. Various advisory committees with prominent men in and out of office as members are instituted to help the Minister of Education in matters of wider scope.

The Minister of Education is authorized to direct and supervise the Superintendent of the Metropolitan Police and the local governors in matters under his control.

The prefectural governors direct and supervise their subordinate officials and

exercise supervision over the public and private schools, kindergartens and libraries within their jurisdictions. There is a Division of Educational Affairs in each prefecture which has control of matters relating to education. School inspectors and sub-inspectors in it inspect schools and conduct educational business directly.

The mayors of cities and towns and the heads of villages deal with affairs regarding elementary schools and exercise control over them. The mayors of cities, moreover, have authority to make recommendations to prefectural governors in the appointment of the principals and teachers of elementary schools. The municipalities have school boards to look after elementary schools.

School Education

As is shown in the following tables, Japan is well provided with schools, ranging from kindergartens up to universities. Almost all the elementary schools are controlled by public bodies.

Conditions are different when we come to secondary education, for which there exist a considerable number of private schools, and in the case of schools of the highest grade the private establishments quite outrange in number those under official control.

Only 18 out of the 45 existing universities were built by the Government, 2 by public bodies and the rest by private bodies.

The total number of schools in Japan proper and their enrolment in the last five years, 1932-1936, is shown below:

Year	Schools	Students
1936	47,750	19,949,792
1935	46,138	14,035,823
1934	45,903	13,760,200
1933	45,793	13,408,971
1932	45,766	13,073,854

Classified according to types, the number of schools in Japan proper in March, 1936, with the number of students enrolled, was as follows:

	Schools	Students
Elementary Schools	25,799	11,425,628
Middle Schools	557	340,657
Girls' High Schools	974	412,126
Business Schools	1,250	396,968
Young People's Schools	16,708	1,902,876
Higher Schools	32	17,898
Universities	45	71,607
Colleges	117	70,894
Higher Trade and Industrial Colleges	60	26,035

	Schools	Students
Normal Schools	102	29,825
Higher Normal Schools	2	1,787
Higher Normal Schools for Women	2	871
Special Institutes for the Training of Teachers	1	59
Institutes for the Training of Business School Teachers	4	360
Institutes for the Training of Young People's School Teachers	45	1,117
Schools for the Blind	78	4,950
Schools for the Deaf and Dumb	62	5,334
Miscellaneous Schools	1,912	240,800
Total	47,750	10,949,782
Kindergartens	1,892	143,676

The figures for schools refer to those existing on March 31, while the figures for students refer to those on March 1.

Elementary Education

Elementary education in Japan is compulsory and has attained to its present high level of excellence through many improvements since the promulgation of the School Ordinance in 1872. In the Imperial Ordinance relating to Elementary Schools the object of elementary education is defined as follows:

"Elementary schools are designed to give children the rudiments of moral education specially adapted to make of them good members of the community, together with such general knowledge and skill as are necessary for the

practical duties of life, due attention being paid to their bodily development."

According to the system of compulsory education all children from 6 to 14 years of age are called school-age children, and those who exercise parental authority over them, or their legal guardians, must send them either to the ordinary elementary schools established by the cities, towns or villages until they complete the required course of study, or to schools established by the Government, prefectures or by private individuals, recognized as equal to the ordinary ones above mentioned. The law is not enforced when a child is unfit for study owing to physical or mental deficiency or cannot be sent to school by reason of extreme poverty. There is a provision which requires the employers of school-age children to see that the work imposed does not interfere with their going to school.

The responsibility of establishing ordinary elementary schools is placed upon cities, towns and villages, and they are making efforts to maintain schools even in the dire depression of the past few years. At the same time, however, special provisions permit the State Treasury to bear part of the expense, and the diffusion of elementary school education in Japan proper is all but ideal, the number of the school-age children attending schools maintaining the rate of 99.57 per cent for the past five years.

The full figures are as follows:

These figures represent the condition existing on March 31 of the respective years.

Year	School-age Children	Children Attending Schools	Children not Attending Schools	Percentage of Children Attending Schools
1936	11,358,094	11,311,266	46,828	99.59
1935	11,150,824	11,103,920	46,904	99.50
1934	11,024,532	10,978,718	45,814	99.58
1933	10,754,962	10,708,930	46,032	99.57
1932	10,392,794	10,344,642	48,152	99.54

Elementary schools are divided into two grades, namely, ordinary or lower and higher. The former are for the beginners and their course extends over six years. The latter are for those who have completed the lower course, and their courses are of two or three years' duration. The subjects taught are morals, Japanese language, arithmetic, Japanese history, geography, science, drawing, singing, sewing (for girls only) and gymnastics. In the higher courses, either one or more subjects out of handicraft, agriculture, industry, com-

merce and domestic science (for girls only), are added, and if local circumstances make it advisable, handicraft in ordinary elementary schools and foreign languages and other useful subjects in higher elementary schools may also be taught.

An elementary school may comprise both the ordinary and the higher elementary school courses and may equip itself with a supplementary course of not more than two years.

Under the present system of compulsory education the father's responsibili-

ty ends when his child has graduated from the lower elementary school. But the ordinary elementary education of children is not sufficient for the existing conditions of society, and many cities, towns and villages establish high-

er elementary schools either independently or in connection with ordinary ones.

The following table will give a general idea of the conditions of elementary schools as they were in 1936:

ELEMENTARY SCHOOLS IN 1936

Schools	Governmental	Public	Private	Total
Ordinary	—	6,942	76	7,018
Ordinary and Higher	4	18,582	20	18,606
Higher	—	174	1	175
Total	4	25,698	97	25,799
Classes				
Ordinary and supplementary	55	193,957	644	194,656
Higher and supplementary	7	37,109	45	37,161
Total	62	231,066	689	231,817
Teachers	92	256,709	890	257,691
Pupils	2,321	11,397,064	26,243	11,425,628
Graduates	444	2,245,685	4,492	2,250,621
Entrants	481	2,653,175	5,435	2,659,091
Daily Attendance				
Ordinary	2,022	9,456,586	24,084	9,482,692
Higher	179	1,589,747	1,411	1,591,337
Total	2,201	11,046,333	25,495	11,074,029
Percentage of Daily Attendance				
Ordinary	94.71	96.80	96.16	96.80
Higher	97.28	96.38	97.18	96.39
Average	94.91	96.74	96.22	96.74

Teachers There are more male teachers than female in the Japanese elementary schools, and they are classified according to their education and special abilities, as (1) elementary school teachers (2) lower elementary school teach-

ers, (3) teachers on special subjects, (4) assistant teachers, and (5) substitute teachers. The teachers belonging to the first two classes are regular teachers properly qualified for the elementary education of children.

ELEMENTARY SCHOOL TEACHERS CLASSIFIED

(March 1, 1936)

	Male	Female	Total
Ordinary Elementary Schools			
Regular teachers	120,462	56,788	177,250
Special teachers	3,768	6,860	10,628
Assistant teachers	3,519	1,917	5,436
Substitute teachers	10,639	10,285	20,924
Total	138,388	75,850	214,238
Higher Elementary Schools			
Regular teachers	35,298	3,214	38,512
Special teachers	1,874	1,306	3,180
Assistant teachers	53	5	58
Substitute teachers	1,346	357	1,703
Total	38,571	4,882	43,453
Grand total	176,959	80,732	257,691

Secondary Education

For the secondary grades there are middle schools for boys, girls' high schools, business schools and Young People's schools.

Middle Schools The course of the middle school extends over five years, and its object is to give boys such a higher general education as will fit them to be useful members of society after their graduation. The subjects taught

are morals, civics, the Japanese language and Chinese classics, history, both Japanese and foreign, geography, a foreign language (either one of English, German, French or Chinese), mathematics, science, technical studies, drawing, music, practical work (carpentering, gardening, etc) and gymnastics.

From the fourth year upwards, the subjects are selected and arranged into two groups, the pupils making choice between the two. Under special circumstances, however, the Minister of Education may authorize a school in which either of the two groups may be dispensed with. This dual system of curriculum is of benefit on the one hand to the pupils who wish to take up employment immediately upon graduation, and on the other to those who wish to advance to collegiate schools.

To the regular course a supplementary course of one year or less may be added, and, if local circumstances require, a preparatory course of two years may also be provided. A boy who desires to enter a middle school must complete either its preparatory course or the full course of an ordinary

elementary school. Those who are twelve or more years of age and in possession of adequate scholastic attainments may be admitted upon examination. Those who have completed the fifth year (the course of the ordinary elementary school ends with the sixth year as mentioned above) of an ordinary elementary school and are physically well developed and have shown excellent scholarship are allowed to apply for the entrance examination, even though under twelve years of age; this is to give a chance to specially gifted boys.

The following are the figures for middle schools and their pupils on March 1 of each year:

Year	Schools	Pupils
1936	557	340,657
1935	555	330,922
1934	554	327,261
1933	558	329,459
1932	558	326,166

A general idea of the condition of the middle schools in 1936 may be obtained by the following table:

MIDDLE SCHOOLS IN 1936

	Governmental	Public	Private	Total
Schools	2	437	111	557
Classes, regular course	25	6,223	1,340	7,588
Number of boys in one class	39.28	44.95	44.33	44.95
Teachers, licensed	61	10,056	2,286	12,403
		Female 4	Female 3	Female 7
.. non-licensed	—	905	582	1,487
		Female 7	Female 4	Female 11
Total	61	10,972	2,875	13,908
Pupils, regular course	982	279,723	59,404	340,109
	Preparatory	—	13	13
Pupils; supplementary course	—	449	86	535
Total	982	280,172	59,503	340,657
Graduates, regular course	172	45,851	8,488	54,511
	Preparatory	—	12	12
.. supplementary course	—	676	86	762
Total	172	46,527	8,586	55,285
Applicants, regular course	1,442	102,277	35,311	139,030
.. supplementary course	—	2,422	210	2,632
Total	1,442	104,699	35,521	141,662
Admitted, regular course	205	64,770	15,670	80,645
Admitted, supplementary Course	—	1,573	152	1,725
Total	205	66,343	15,822	82,370
Left school, regular course	40	17,896	7,214	25,150

Girls' High Schools The system of high schools for girls is made flexible to suit practical requirements. A girl who has completed elementary school or has equivalent scholastic attainments and is twelve years or more of age may be admitted to a girls' high school. The course of the girls' high school ex-

tends over four or five years, and those schools whose entrance requirement is the completion of the higher elementary school or the possession of the same or higher scholastic attainments are allowed to shorten their course to three years. There is another kind of girls' high school which is called Girls' Do-

estic High School, where domestic science is the main course of study, and its regular course extends over two to four years. Girls who wish to take only one part of the course are allowed to do so on application. A supplementary course of two years or less may be provided for the benefit of those who wish to continue their study after completing the regular course, and a post-graduate course or a higher course of two or three years for the purpose of giving higher education. In the cases of the higher course, higher qualifications are required of the teachers and its standard is brought up almost to that of the higher school for boys.

The subjects taught in a girls' high school are the same as those taught in the middle schools, but with the addition of domestic science and sewing, the required hours of study being from 28 to 29 a week. In the case of the Girls' Domestic High School, technical study added and the hours for domestic science and sewing are double those of the ordinary high school, the time allowed for other subjects being shortened, and foreign languages omitted altogether. Under special circumstances the foreign language, drawing and music may be omitted, and if local circumstances require, pedagogics, manual arts,

technical studies and other useful subjects may be taught in addition to the normal curriculum. In cases the total weekly hours may be increased to a little over 30. The curriculum of a domestic course of three years, the entrance requirement of which is the completion of the first year of the higher elementary school, is to be suitably drawn up on the basis of that of a domestic course of two years, the entrance requirement of which is the completion of the higher elementary school, and be submitted to the Minister of Education for approval.

The progress of female education is phenomenal in modern Japan and girls' high schools have taken very marked strides in recent years both in number and quality. At the end of March, 1936, there were 974 girls' high schools in Japan proper, many of them being provided with, or contemplating the provision of, a post-graduate course or a higher course.

The number of schools and girl students on March 1 of each year was as follows:

Year	Schools	Girls
1936	974	412,126
1935	970	388,935
1934	975	371,807
1933	963	361,739
1932	980	362,625

GIRLS' HIGH SCHOOLS IN 1936

	Governmental	Public	Private	Total
Schools:				
High School	2	573	219	794
Domestic H. S.	1	161	18	180
Total	3	734	237	974
Classes:				
Regular course	20	5,605	2,269	7,894
In a class, average	46.25	48.41	46.04	47.73
Post graduate	—	26	—	26
In a class, average	—	27.54	—	27.54
Domestic High School	4	594	118	716
In a class, average	46.50	41.05	37.68	40.53
Teachers, licensed:				
High School, regular course, male	15	5,397	1,853	7,265
female	31	3,905	2,040	5,976
Post graduate, male	—	50	—	50
female	—	11	—	11
Domestic High School, male	6	317	90	413
female	4	521	78	603
Teachers, unlicensed:				
High School, regular course, male	—	324	460	784
female	—	168	397	565
Post graduate, male	—	2	—	2
female	—	6	—	6
Domestic High School, male	—	82	40	122
female	—	55	35	90