

ment of toys was reportedly caused by the difficulty of acquiring materials, while the 19 per cent fall in the sales of silk textiles was attributed to a fall in foreign demand. Though the value of raw silk shipments was 10 per cent greater than during the first half of 1938, the quantity was 41,412 bales less than a year ago, amounting to but 161,568 bales.

Details of principal exports of Japan proper and Karafuto follow:

	Jan.-June (Unit: ¥1,000)	Compared with 1938
Cotton textiles	182,893	- 37,661
Raw silk	166,621	15,734
Rayon textiles	62,149	7,671
Machines	102,047	41,747
Canned foods	41,180	8,946
Silk textiles	19,425	- 4,463
Knitted goods	18,616	1,105
Woolen textiles	27,999	10,146
Porcelain	19,717	1,349

	Jan.-June (Unit: ¥1,000)	Compared with 1938
Toys	9,336	- 2,547
Rayon yarn	11,411	3,908
Lumber	44,615	26,295
Others	717,931	168,307
Total	1,454,405	253,772

FOREIGN TRADE OF THE EMPIRE (Unit: ¥1,000)

Year	Exports	Imports	Excess of Imports
1929	2,217,658	2,389,175	171,517
1930	1,518,574	1,680,314	161,740
1931	1,179,212	1,319,406	140,193
1932	1,457,296	1,524,521	67,225
1933	1,932,069	2,017,504	85,435
1934	2,258,081	2,400,495	142,414
1935	2,603,152	2,617,910	14,758
1936	2,797,599	2,927,975	130,377
1937	3,318,820	3,954,726	635,905
1938	2,896,770	2,836,321	60,449

(Export exc.)

FOREIGN TRADE OF THE EMPIRE IN 1938

(Value in ¥1,000)

	Exports			Imports		
	Total Value	Compared with the previous year	Rate of Increase or Decrease	Total Value	Compared with the previous year	Rate of Increase or Decrease
Japan Proper	2,689,677	-485,741	-15.3%	2,663,437	-1,119,740	-29.5%
Korea	169,067	55,969	49.5	132,733	6,681	5.3
Formosa	36,350	6,434	21.5	38,709	- 5,510	-12.4
South Sea Islands	1,676	1,288	332.2	1,444	176	13.8
Total	2,896,770	-422,050	-12.1	2,836,321	-1,118,405	-28.3

JAPAN'S TRADE IN 1938

(Japan Proper and Karafuto)

(In ¥1,000)

	Exports		Imports	
	1937	1938	1937	1938
Asia	1,645,915	1,664,725	1,295,114	1,023,532
Manchoukuo	216,092	316,323	249,071	339,217
Kwantung Leased Territory	395,916	536,317	45,188	60,323
China	179,251	312,900	143,636	164,611
Asiatic Russia	23,851	4,715	3,902	380
Hong Kong	49,150	16,754	5,332	1,308
Siam	49,382	39,269	13,571	4,951
Straits Settlements	67,433	20,696	67,796	54,167
British India	299,367	188,040	449,486	172,231
Iraq	23,644	17,082	9,028	6,114
Philippines	60,348	32,599	45,194	35,630
Dutch East Indies	200,051	104,145	153,450	88,249
Europe	356,299	261,018	504,001	376,266
England	168,297	134,972	105,772	63,157
France	47,208	36,814	27,885	13,502

	Exports		Imports	
	1937	1938	1937	1938
Germany	43,261	33,015	176,363	171,170
Belgium	20,650	10,151	41,059	15,441
Sweden	11,545	8,277	49,277	24,069
North America	659,601	440,404	1,374,252	1,006,803
United States	639,428	425,123	1,269,542	915,354
Canada	20,036	15,244	104,692	91,260
Central America	54,885	29,415	18,765	7,129
South America	109,519	60,152	162,611	91,235
Argentina	42,481	19,607	42,018	24,356
Africa	242,736	137,336	206,305	60,621
Egypt	32,772	13,997	74,118	36,315
Canea, Uganda & Tanganyika	40,122	22,504	24,155	4,269
South Africa	53,749	35,289	88,852	9,558
Oceania	106,463	96,610	222,129	97,850
Australia	72,080	69,388	165,252	82,875

VALUE OF EXPORTS AND IMPORTS (Japan Proper and Karafuto)

(In ¥1,000)

Year	Exports	Imports	Total	Excess of Imports over Exports	Year	Exports	Imports	Total	Excess of Imports over Exports
1899	214,929	220,401	435,331	5,472	(Export exc.)				
1900	204,429	287,261	491,691	82,831	1919	2,098,872	2,173,459	4,272,332	74,587
1901	252,349	255,816	508,166	3,467	1920	1,946,394	2,336,174	4,284,569	387,780
1902	258,303	271,731	530,034	13,428	1921	1,252,837	1,614,154	2,866,992	361,317
1903	289,502	317,135	606,637	27,633	1922	1,637,451	1,890,308	3,527,760	252,856
1904	319,260	371,360	690,621	52,099	1923	1,447,750	1,982,230	3,429,981	534,479
1905	321,533	488,538	810,071	167,004	1924	1,807,034	2,453,402	4,260,437	646,367
1906	423,754	418,784	842,539	4,970	1925	2,305,589	2,572,657	4,878,247	267,068
(Export exc.)					1926	2,004,727	2,377,484	4,422,212	332,756
1907	432,412	494,467	926,880	62,054	1927	1,992,317	2,179,153	4,171,471	186,836
1908	378,245	436,257	814,503	58,011	1928	1,971,955	2,196,314	4,168,270	224,359
1909	413,112	394,198	807,311	18,913	1929	2,148,618	2,216,240	4,364,858	67,621
(Export exc.)					1930	1,469,852	1,546,070	3,015,923	76,218
1910	458,428	464,233	922,662	5,804	1931	1,146,981	1,235,075	2,382,056	88,093
1911	447,433	513,805	961,239	66,371	1932	1,409,992	1,431,461	2,841,453	21,469
1912	526,981	618,992	1,145,974	92,010	1933	1,861,045	1,917,219	3,778,266	56,174
1913	632,460	729,431	1,361,891	96,971	1934	2,171,924	2,282,601	4,454,526	110,677
1914	591,101	595,735	1,186,837	4,634	1935	2,499,072	2,472,235	4,971,307	26,837
1915	708,306	532,449	1,240,756	175,857	(Export exc.)				
(Export exc.)					1936	2,692,976	2,763,681	5,456,657	70,705
1916	1,127,468	756,427	1,883,896	371,040	1937	3,175,418	3,783,177	6,958,595	607,759
(Export exc.)					1938	2,689,677	2,663,437	5,353,114	26,240
1917	1,603,005	1,035,811	2,638,816	567,139	(Export exc.)				

EXPORTS AND IMPORTS OF GOLD AND SILVER BULLION AND SPECIE

(In ¥1,000)

Year	Exports	Imports	Excess of Exports over Imports	Excess of Imports over Exports	Year	Exports	Imports	Excess of Exports over Imports	Excess of Imports over Exports
1898	86,987	42,563	44,237	-	1901	14,049	10,860	3,088	-
1899	11,178	20,163	-	8,985	1902	2,028	32,161	-	30,132

Year	Exports		Imports		Excess of Exports over Imports	Year	Exports		Imports		Excess of Exports over Imports
	1903-1920	1921-1937	1903-1920	1921-1937			1903-1920	1921-1937			
1903	19,001	27,807	—	8,806	1921	—	138,621	—	138,621		
1904	107,795	33,946	73,849	—	1922	2,180	1,672	508	—		
1905	19,354	31,506	—	15,152	1923	5,465	196	5,269	—		
1906	25,784	47,211	—	21,426	1924	6	4,109	—	4,103		
1907	18,759	8,256	10,503	—	1925	22,305	173	22,132	—		
1908	3,772	17,544	—	13,772	1926	35,897	1,628	34,269	—		
1909	6,584	79,587	—	73,003	1927	49,680	8,515	41,165	—		
1910	25,175	17,671	7,504	—	1928	3,436	2,696	740	—		
1911	24,398	6,168	18,230	—	1929	3,490	613	2,877	—		
1912	28,325	11,544	16,781	—	1930	311,007	9,686	301,321	—		
1913	27,093	1,021	26,072	—	1931	421,400	11,177	410,223	—		
1914	29,649	9,107	20,542	—	1932	121,378	140	121,238	—		
1915	44,566	24,296	20,270	—	1933	28,608	125	28,483	—		
1916	28,079	101,029	—	72,950	1934	13,924	331	13,594	—		
1917	153,736	392,224	238,488	—	1935	225,405	142	225,263	—		
1918	937	5,016	—	4,079	1936	36,021	915	35,106	—		
1919	5,053	327,476	322,423	—	1937	390,622	1,329	389,293	—		
1920	3,897	404,726	400,829	—							

RATE OF TRADE EXPANSION OF JAPAN PROPER
IN THE PAST 5 YEARS

Year	Export Amount in ¥1,000	Rate of Increase as compared with the Previous Year	Imports Amount in ¥1,000	Rate of Increase as compared with the Previous Year	Excess of Imports (-) or Exports (+)
1934	2,171,925	17%	2,282,602	19%	(-) 110,677
1935	2,499,073	15	2,472,236	9	(+) 26,837
1936	2,692,976	7.5	2,763,681	11.8	(-) 70,705
1937	3,175,418	17.9	3,783,177	36.9	(-) 607,759
1938	2,689,677	(-) 15.3	2,663,437	(-) 29.5	(+) 26,240

VALUE OF CHIEF COMMODITIES EXPORTED TO VARIOUS COUNTRIES

Commodity	Japan Proper and Karafuto (In ¥1,000)			1938	1937	1936
	1938	1937	1936			
Cotton tissues	404,240	573,065	483,591	6,053	12,057	7,680
British India	67,879	63,041	72,517	5,053	12,231	9,188
Dutch East Indies	39,486	85,603	55,391	4,586	9,514	15,102
Manchoukuo	38,010	55,748	47,221	4,289	7,951	6,027
China	23,911	11,296	7,860	4,155	2,236	1,941
Kwantung L. T.	17,389	29,426	28,332	3,863	3,273	2,045
Canea, Uganda and Tanganyika	15,882	23,003	18,724	3,621	2,641	1,681
Australia	15,070	13,527	13,984	3,115	4,048	4,086
Siam	14,905	16,149	13,620	2,785	3,920	2,290
French Morocco	13,788	10,820	11,786	2,716	3,286	1,833
Argentina	13,130	29,295	14,780	2,694	5,400	5,376
Anglo-Egyptian Sudan	10,161	12,103	9,004	2,677	4,776	2,985
Syria	9,840	10,614	8,344	2,493	3,044	2,838
Iraq	9,797	10,875	10,449	2,407	22,179	13,780
Union of South Africa	7,124	10,214	7,349	2,347	10,510	20,525
Aden	6,285	9,892	9,520	2,081	2,496	4,074
Philippine Islands	6,053	12,057	7,680	2,028	4,934	1,930
Straits Settlements	5,053	12,231	9,188	1,865	4,009	2,401
Hong-Kong	4,586	9,514	15,102	1,823	2,630	2,414
Chile	4,289	7,951	6,027			
Iran	4,155	2,236	1,941			
Arabia	3,863	3,273	2,045			
Ceylon	3,621	2,641	1,681			
Germany	3,115	4,048	4,086			
Mozambique	2,785	3,920	2,290			
Sweden	2,716	3,286	1,833			
Venezuela	2,694	5,400	5,376			
Great Britain	2,677	4,776	2,985			
New Zealand	2,493	3,044	2,838			
U. S. A.	2,407	22,179	13,780			
Egypt	2,347	10,510	20,525			
Turkey	2,081	2,496	4,074			
Uruguay	2,028	4,934	1,930			
Dominica	1,865	4,009	2,401			
Palestine	1,823	2,630	2,414			

Commodity	1938			1937			1936		
	1938	1937	1936	1938	1937	1936	1938	1937	1936
Finland	1,813	2,969	1,313	1,072	1,635	1,040			
Costa Rica	1,381	1,892	1,321	495	673	551			
Honduras	1,344	2,223	2,483	169	173	267			
Peru	1,330	1,347	1,422	60,715	30,746	17,622			
Panama	1,312	1,246	946	23,063	15,249	620			
Eritrea	1,219	5	—	21,901	11,669	8,832			
Norway	1,149	1,567	1,416	15,748	2,560	6,013			
Nigeria	1,063	2,076	1,011	52,231	54,116	40,302			
Raw Silk	364,124	407,118	392,809	22,786	12,590	8,718			
U. S. A.	297,882	325,225	333,949	10,413	5,288	2,699			
Great Britain	26,175	31,430	23,628	6,357	2,668	2,967			
France	24,631	26,111	21,772	2,857	7,774	4,181			
Australia	6,461	8,132	5,231	2,728	6,221	4,309			
British India	1,520	8,460	3,872	651	2,262	2,098			
Italy	351	269	11	561	1,534	2,045			
Canada	278	727	823	388	516	468			
Switzerland	177	433	142						
Machines and accessories	156,475	109,881	82,054	364	845	697			
Kwantung L. T.	75,807	46,584	41,166	337	493	460			
China	35,925	24,152	16,936	279	2,027	2,154			
Manchoukuo	30,384	14,835	6,370						
British India	5,794	6,443	2,969	190	877	544			
Asiatic Russia	1,811	4,460	8,042	105	657	696			
Dutch East Indies	1,038	2,113	968	52,127	38,708	27,545			
Philippine Islands	817	1,073	505	19,393	13,814	9,699			
Brazil	270	436	277	16,149	6,940	7,413			
Australia	162	392	118	8,857	5,931	3,008			
Rayon tissues	115,762	154,860	149,170	1,497	1,773	1,116			
Kwantung L. T.	20,243	15,612	21,494	1,123	1,613	1,025			
Australia	17,303	16,667	18,415	808	1,830	916			
Manchoukuo	17,029	2,574	842	787	1,176	477			
British India	11,627	32,466	26,221	718	1,777	1,213			
Dutch East Indies	7,202	11,490	11,633	572	921	565			
China	6,883	1,334	492	541	802	515			
Union of South Africa	3,475	7,168	5,839	529	372	281			
New Zealand	3,318	4,621	4,151	328	404	317			
Straits Settlements	2,207	3,632	2,848	101	564	360			
Hong-Kong	2,150	7,673	7,509	49,352	72,286	68,027			
Philippine Islands	2,096	5,500	8,674	9,023	9,518	8,306			
Siam	1,569	3,522	4,440	7,896	13,838	13,203			
Uruguay	1,217	3,663	5,107	7,402	11,531	7,544			
Great Britain	1,043	1,537	912	4,049	2,839	3,474			
Canada	911	997	725	1,923	2,664	4,076			
U. S. A.	624	1,512	612	1,772	3,158	2,333			
Canea, Uganda and Tanganyika	543	1,295	851	1,515	1,673	1,443			
Mozambique	510	1,360	795	1,494	393	681			
Comestibles in tin and bottle	92,819	86,905	71,077						
Great Britain	40,832	29,122	32,384	1,454	3,531	4,005			
U. S. A.	12,212	21,940	15,458	1,449	1,464	851			
China	9,865	854	383	1,122	4,597	3,613			
Kwantung L. T.	7,228	3,902	1,916	655	68	33			
Manchoukuo	2,460	1,202	670	627	1,148	1,089			
Australia	2,464	2,489	946	620	1,882	1,142			
Belgium	2,337	3,903	2,465	398	410	651			
Hawaii	1,747	1,755	1,092	369	390	480			
France	1,675	2,722	2,472	360	349	232			
Netherlands				330	701	851			
Germany				214	646	369			
France Indo-China				201	921	567			
Canada				174	222	217			
Timber				46,887	35,412	24,703			

Year	Exports		Imports		Excess of Exports over Imports	Excess of Imports over Exports
	Exports	Imports	Exports	Imports		
1903	19,001	27,807	—	—	8,806	—
1904	107,795	33,946	73,849	—	—	—
1905	19,354	31,506	—	—	15,152	—
1906	25,784	47,211	—	—	21,426	—
1907	18,759	8,256	10,503	—	—	—
1908	3,772	17,544	—	—	13,772	—
1909	6,584	79,587	—	—	73,003	—
1910	25,175	17,671	7,504	—	—	—
1911	24,398	6,168	18,230	—	—	—
1912	28,325	11,544	16,781	—	—	—
1913	27,093	1,021	26,072	—	—	—
1914	29,649	9,107	20,542	—	—	—
1915	44,566	24,296	20,270	—	—	—
1916	28,079	101,029	—	—	72,950	—
1917	153,736	392,224	238,488	—	—	—
1918	937	5,016	—	—	4,079	—
1919	5,053	327,476	322,423	—	—	—
1920	3,897	404,726	400,829	—	—	—

Year	Exports		Imports		Excess of Exports over Imports	Excess of Imports over Exports
	Exports	Imports	Exports	Imports		
1921	—	—	138,621	—	138,621	—
1922	2,180	1,672	—	—	508	—
1923	5,465	196	—	—	5,269	—
1924	6	4,109	—	—	4,103	—
1925	22,305	173	—	—	22,132	—
1926	35,897	1,628	—	—	34,269	—
1927	49,680	8,515	—	—	41,165	—
1928	3,436	2,696	—	—	740	—
1929	3,490	613	—	—	2,877	—
1930	311,007	9,686	—	—	301,321	—
1931	421,400	11,177	—	—	410,223	—
1932	121,378	140	—	—	121,238	—
1933	28,608	125	—	—	28,483	—
1934	13,924	331	—	—	13,594	—
1935	225,405	142	—	—	225,263	—
1936	36,021	915	—	—	35,106	—
1937	390,622	1,329	—	—	389,293	—

RATE OF TRADE EXPANSION OF JAPAN PROPER
IN THE PAST 5 YEARS

Year	Export Amount in ¥1,000	Rate of Increase as compared with the Previous Year	Imports Amount in ¥1,000	Rate of Increase as compared with the Previous Year	Excess of Imports (-) or Exports (+)
1934	2,171,925	17%	2,282,602	19%	(-) 110,677
1935	2,499,073	15	2,472,236	9	(+) 26,837
1936	2,692,976	7.5	2,763,681	11.8	(-) 70,705
1937	3,175,418	17.9	3,783,177	36.9	(-) 607,759
1938	2,689,677	(-) 15.3	2,663,437	(-) 29.5	(+) 26,240

VALUE OF CHIEF COMMODITIES EXPORTED TO VARIOUS
COUNTRIES

Japan Proper and Karafuto
(In ¥ 1,000)

Commodity	1938			1937			1936		
	1938	1937	1936	1938	1937	1936	1938	1937	1936
Cotton tissues	404,240	573,065	483,591	6,053	12,057	7,680	5,053	12,231	9,188
British India	67,879	63,041	72,517	4,586	9,514	15,102	4,269	7,951	6,027
Dutch East Indies	39,486	85,603	55,391	4,155	2,236	1,941	3,863	3,273	2,045
Manchoukuo	38,010	55,748	47,221	3,621	2,641	1,681	3,115	4,048	4,086
China	23,911	11,296	7,660	2,785	3,920	2,290	2,716	3,286	1,833
Kwantung L. T.	17,389	29,426	28,332	2,694	5,400	5,376	2,677	4,776	2,985
Canea, Uganda and Tanganyika	15,882	23,003	18,724	2,493	3,044	2,838	2,407	22,179	13,780
Australia	15,070	13,527	13,984	2,347	10,510	20,525	2,081	2,496	4,074
Siam	14,905	16,149	13,620	2,028	4,934	1,930	1,865	4,009	2,401
French Morocco	13,788	10,820	11,786	1,823	2,630	2,414	1,512	1,512	612
Argentina	13,130	29,295	14,780	543	1,295	851	510	1,360	795
Anglo-Egyptian Sudan	10,161	12,103	9,004	510	1,360	795	92,819	86,905	71,077
Syria	9,840	10,614	8,344	40,832	29,122	32,384	12,212	21,940	15,458
Iraq	9,797	10,875	10,449	9,865	854	383	7,228	3,902	1,916
Union of South Africa	7,124	10,214	7,349	2,480	1,202	670	2,464	2,489	946
Aden	6,285	9,892	9,520	2,337	3,903	2,465	1,747	1,755	1,092
Philippine Islands	6,053	12,057	7,680	1,675	2,722	2,472	1,675	2,722	2,472
Straits Settlements	5,053	12,231	9,188	1,675	2,722	2,472	1,675	2,722	2,472
Hong-Kong	4,586	9,514	15,102	1,675	2,722	2,472	1,675	2,722	2,472
Chile	4,269	7,951	6,027	1,675	2,722	2,472	1,675	2,722	2,472
Iran	4,155	2,236	1,941	1,675	2,722	2,472	1,675	2,722	2,472
Arabia	3,863	3,273	2,045	1,675	2,722	2,472	1,675	2,722	2,472
Ceylon	3,621	2,641	1,681	1,675	2,722	2,472	1,675	2,722	2,472
Germany	3,115	4,048	4,086	1,675	2,722	2,472	1,675	2,722	2,472
Mozambique	2,785	3,920	2,290	1,675	2,722	2,472	1,675	2,722	2,472
Sweden	2,716	3,286	1,833	1,675	2,722	2,472	1,675	2,722	2,472
Venezuela	2,694	5,400	5,376	1,675	2,722	2,472	1,675	2,722	2,472
Great Britain	2,677	4,776	2,985	1,675	2,722	2,472	1,675	2,722	2,472
New Zealand	2,493	3,044	2,838	1,675	2,722	2,472	1,675	2,722	2,472
U. S. A.	2,407	22,179	13,780	1,675	2,722	2,472	1,675	2,722	2,472
Egypt	2,347	10,510	20,525	1,675	2,722	2,472	1,675	2,722	2,472
Turkey	2,081	2,496	4,074	1,675	2,722	2,472	1,675	2,722	2,472
Uruguay	2,028	4,934	1,930	1,675	2,722	2,472	1,675	2,722	2,472
Dominica	1,865	4,009	2,401	1,675	2,722	2,472	1,675	2,722	2,472
Palestine	1,823	2,630	2,414	1,675	2,722	2,472	1,675	2,722	2,472

Commodity	1938			1937			1936		
	1938	1937	1936	1938	1937	1936	1938	1937	1936
Finland	1,813	2,969	1,313	1,072	1,635	1,040	1,072	1,635	1,040
Costa Rica	1,381	1,892	1,321	495	673	551	495	673	551
Honduras	1,344	2,223	2,483	169	173	267	169	173	267
Peru	1,330	1,347	1,422	60,715	30,746	17,622	60,715	30,746	17,622
Panama	1,312	1,246	946	23,063	15,249	620	23,063	15,249	620
Eritrea	1,219	5	—	21,901	11,669	8,832	21,901	11,669	8,832
Norway	1,149	1,567	1,416	15,748	2,560	6,013	15,748	2,560	6,013
Nigeria	1,063	2,076	1,011	52,231	54,116	40,302	52,231	54,116	40,302
Raw Silk	364,124	407,118	392,809	22,786	12,590	8,718	22,786	12,590	8,718
U. S. A.	297,882	325,225	333,949	10,413	5,288	2,699	10,413	5,288	2,699
Great Britain	26,175	31,430	23,628	6,357	2,668	2,967	6,357	2,668	2,967
France	24,631	26,111	21,772	2,857	7,774	4,181	2,857	7,774	4,181
Australia	6,461	8,132	5,231	2,728	6,221	4,309	2,728	6,221	4,309
British India	1,520	8,460	3,872	651	2,262	2,098	651	2,262	2,098
Italy	351	269	11	561	1,534	2,045	561	1,534	2,045
Canada	278	727	823	388	516	468	388	516	468
Switzerland	177	433	142	—	—	—	—	—	—
Machines and accessories	156,475	109,881	82,054	364	845	697	364	845	697
Kwantung L. T.	75,807	46,584	41,166	337	493	460	337	493	460
China	35,925	24,152	16,936	279	2,027	2,154	279	2,027	2,154
Manchoukuo	30,384	14,835	6,370	190	877	544	190	877	544
British India	5,794	6,443	2,969	105	657	696	105	657	696
Asiatic Russia	1,811	4,460	8,042	52,127	38,708	27,545	52,127	38,708	27,545
Dutch East Indies	1,038	2,113	968	19,393	13,814	9,699	19,393	13,814	9,699
Philippine Islands	817	1,073	505	16,149	6,940	7,413	16,149	6,940	7,413
Brazil	270	436	277	8,857	5,931	3,008	8,857	5,931	3,008
Australia	162	392	118	1,497	1,773	1,116	1,497	1,773	1,116
Rayon tissues	115,762	154,860	149,170	1,123	1,613	1,025	1,123	1,613	1,025
Kwantung L. T.	20,243	15,612	21,494	808	1,830	916	808	1,830	916
Australia	17,303	16,667	18,415	767	1,176	477	767	1,176	477
Manchoukuo	17,029	2,574	842	718	1,777	1,213	718	1,777	1,213
British India	11,627	32,466	26,221	572	921	565	572	921	565
Dutch East Indies	7,202	11,490	11,633	541	802	515	541	802	515
China	6,883	1,334	492	529	372	281	529	372	281
Union of South Africa	3,475	7,168	5,838	328	404	317	328	404	317
New Zealand	3,318	4,621	4,151	101	564	360	101	564	360
Straits Settlements	2,207	3,632	2,848	49,352	72,286	68,027	49,352	72,286	68,027
Hong-Kong	2,150	7,673	7,509	9,023	9,518	8,306	9,023	9,518	8,306
Philippine Islands	2,096	5,500	8,674	7,896	13,838	13,203	7,896	13,838	13,203
Siam	1,569	3,522	4,440	7,402	11,531	7,544	7,402	11,531	7,544
Uruguay	1,217	3,663	5,107	4,049	2,839	3,474	4,049	2,839	3,474
Great Britain	1,043	1,537	912	1,923	2,664	4,076	1,923	2,664	4,076
Canada	911	997	725	1,772	3,158	2,333	1,772	3,158	2,333
U. S. A.	624	1,512	612	1,515	1,673	1,443	1,515	1,673	1,443
Canea, Uganda and Tanganyika	543	1,295	851	1,494	393	681	1,494	393	681
Mozambique	510	1,360	795	1,454	3,531	4,005	1,454	3,531	4,005
Comestibles in tin and bottle	92,819	86,905	71,077	1,449	1,464	851	1,449	1,464	851
Great Britain	40,832	29,122	32,384	1,122	4,597	3,613	1,122	4,597	3,613
U. S. A.	12,212	21,940	15,458	655	68	33	655	68	33
China	9,865	854	383	627	1,148	1,089	627	1,148	1,089
Kwantung L. T.	7,228	3,902	1,916	620	1,882	1,142	620	1,882	1

	1938	1937	1936		1938	1937	1936
Kwantung L. T.	15,168	6,122	3,856	Canea, Uganda and			
China	13,839	2,951	2,461	Tanganyika	151	315	142
Great Britain	4,962	12,141	3,301	Siam	144	270	307
Manchoukuo	4,299	1,536	1,313	France	133	426	317
Asiatic Russia	1,636	1,687	1,082	French Indo-China	131	232	270
British India	1,242	1,533	1,123	Cotton yarn	39,355	54,906	38,345
Union of South				British India	20,502	19,846	18,051
Africa	534	1,169	1,016	Dutch East Indies	7,419	13,790	5,489
Netherland	418	660	462	Manchoukuo	3,232	8,334	6,391
Australia	355	383	308	Philippine Islands	1,134	1,761	1,259
Belgium	333	781	596	Hong-Kong	716	3,625	1,840
Straits Settlements	206	627	469	China	626	1,025	279
U. S. A.	159	622	521	Australia	372	235	391
Woollen tissues	46,845	50,082	45,956	Kwantung L. T.	368	1,423	447
Manchoukuo	11,651	3,800	1,052	Siam	269	543	994
Kwantung L. T.	11,529	11,903	13,187	Glass and manufac-			
China	9,508	3,823	3,616	tures	25,886	33,572	25,627
British India	3,460	9,884	5,254	British India	5,492	7,215	5,817
Egypt	1,458	4,671	4,051	Dutch East Indies	2,676	3,436	2,206
Knitted goods	40,818	60,713	49,988	China	2,015	1,161	1,319
Dutch East Indies	6,086	7,602	4,426	U. S. A.	1,857	4,543	3,059
Philippine Islands	4,024	5,015	5,475	Manchoukuo	1,820	1,370	822
Manchoukuo	3,441	3,363	1,813	Kwantung L. T.	1,635	1,180	799
Great Britain	3,203	5,967	5,206	Australia	1,367	1,412	1,114
Union of South				Philippine Islands	1,130	1,991	1,330
Africa	2,579	3,180	2,711	Great Britain	963	890	488
British India	2,366	4,560	4,256	Union of South			
Kwantung L. T.	2,332	2,018	1,600	Africa	663	1,070	831
U. S. A.	1,462	6,849	6,784	New Zealand	462	446	366
Mozambique	969	1,003	892	Siam	279	763	728
Canea, Uganda and				Straits Settlements	260	1,337	1,087
Tanganyika	713	1,026	906	Mozambique	208	287	238
Straits Settlements	695	1,401	1,496	Hong-Kong	161	373	407
China	566	207	120	Canea, Uganda and			
Egypt	272	1,030	965	Tanganyika	129	258	158
Australia	175	140	70	French Indo-China	120	234	258
Potteries and Por-				Toys	24,991	42,295	36,459
celains	40,477	53,971	43,548	U. S. A.	6,093	16,521	13,689
U. S. A.	8,696	19,460	15,530	Great Britain	5,504	7,036	5,916
Kwantung L. T.	4,643	2,353	1,859	Australia	2,187	2,276	2,137
Manchoukuo	3,821	2,222	1,391	British India	1,715	2,787	2,784
Australia	2,915	2,599	2,291	Canada	1,262	1,664	1,081
Dutch East Indies	2,714	3,109	2,388	Netherlands	879	844	982
British India	2,580	4,240	3,696	Manchoukuo	671	436	310
China	2,453	1,146	1,127	Union of South			
Canada	1,235	2,038	2,025	Africa	638	1,067	891
Union of South				Dutch East Indies	500	1,132	959
Africa	1,009	1,259	1,144	New Zealand	434	551	419
Great Britain	888	1,171	1,275	Germany	431	190	252
Argentina	786	1,259	595	Argentina	406	562	425
Philippine Islands	628	1,431	1,148	Brazil	331	378	338
Netherlands	607	542	608	Philippine Islands	314	567	435
Brazil	576	1,036	461	Belgium	289	440	284
New Zealand	453	438	443	China	270	339	507
Egypt	415	364	495	Egypt	178	366	644
Mozambique	338	445	309	France	154	282	158
Straits Settlements	307	1,174	514	Straits Settlements	135	631	643
Germany	296	303	245	Refined Sugar	23,654	18,577	20,977
Hong-Kong	191	363	481	Kwantung L. T.	13,081	7,770	13,226
				China	7,309	8,298	5,826

	1938	1937	1936		1938	1937	1936
Manchoukuo	3,259	1,715	1,361	French Indo-China	238	80	119
Aquatic products	21,931	21,916	22,216	Beer	10,019	5,686	5,912
Kwantung L. T.	9,230	7,402	4,402	China	6,034	944	555
China	6,552	3,418	7,219	Kwantung L. T.	1,646	1,980	1,750
U. S. A.	3,370	3,972	2,811	British India	639	753	650
Manchoukuo	978	578	334	Manchoukuo	525	308	1,158
Hawaii	710	802	689	Hawaii	380	397	265
Philippine Islands	314	697	634	Buttons	9,730	13,737	11,635
Hong-Kong	134	2,016	2,436	Great Britain	1,837	3,047	2,566
Rayon yarn	17,888	44,803	29,174	British India	808	1,432	1,116
China	7,487	4,629	2,002	Netherlands	522	710	677
British India	4,274	23,154	8,747	Australia	516	669	596
Mexico	1,150	6,018	2,332	Manchoukuo	507	393	246
Kwantung L. T.	672	1,328	8,840	Argentina	506	620	306
Australia	550	518	1,223	Dutch East Indies	482	653	352
Lamps and acces-				Germany	457	353	415
sories	14,748	21,950	18,587	Belgium	445	680	414
Kwantung L. T.	2,949	1,916	1,116	China	380	318	364
U. S. A.	1,737	4,238	4,931	U. S. A.	343	575	818
China	1,613	520	502	Kwantung L. T.	220	153	150
Great Britain	1,453	2,895	2,459	Canada	133	116	89
Manchoukuo	1,191	592	389	Vegetable oils	8,572	23,662	35,496
Dutch East Indies	811	1,801	1,122	U. S. A.	5,638	18,956	31,665
British India	718	1,584	1,148	Kwantung L. T.	431	310	273
Canada	383	666	219	Germany	376	966	419
Australia	345	565	571	Great Britain	219	639	825
Hong-Kong	127	321	428	Australia	154	239	113
Philippine Islands	124	457	435	Soap	7,837	5,531	4,246
Tea	12,063	23,181	13,130	Manchoukuo	3,713	2,141	1,300
U. S. A.	4,316	7,750	5,549	Kwantung L. T.	2,090	1,154	1,138
Canada	641	1,226	1,097	China	1,500	432	535
British India	599	862	588	Rubber tyres	7,799	12,983	9,939
Kwantung L. T.	490	313	242	Kwantung L. T.	2,853	3,449	1,601
Hats and Caps	11,092	26,337	19,736	Manchoukuo	1,323	1,052	478
U. S. A.	3,081	8,479	5,233	China	1,251	2,132	2,010
Manchoukuo	973	1,192	786	British India	767	1,099	1,206
Kwantung L. T.	820	655	560	Dutch East Indies	403	1,503	1,449
China	801	1,884	1,642	Fish and whale oils	7,027	15,414	10,180
British India	536	1,736	1,247	U. S. A.	1,886	1,466	864
Great Britain	429	1,603	1,272	Germany	1,857	6,314	3,931
Union of South				Great Britain	1,116	1,531	922
Africa	401	768	913	Kwantung L. T.	578	562	450
Dutch East Indies	397	693	462	Netherlands	348	583	1,211
Australia	221	311	281	Australia	141	254	168
Argentina	168	140	122	Beans	6,972	9,330	7,060
Mozambique	142	263	229	Great Britain	2,706	4,739	4,463
Clothing and acces-				Germany	1,808	1,700	589
sories	10,167	15,535	11,853	Cotton towels	6,961	8,935	6,830
British India	3,515	4,048	3,202	Union of South			
U. S. A.	1,369	3,132	2,249	Africa	985	872	634
Great Britain	762	827	695	Australia	861	904	496
Australia	460	558	493	Siam	409	311	444
Manchoukuo	254	212	126	Kwantung L. T.	357	321	238
Philippine Islands	155	342	266	Dutch East Indies	288	593	536
China	121	108	231	Straits Settlements	100	387	418
Coal	10,147	9,927	10,356	Cement	6,411	6,836	8,002
Hong-Kong	3,216	3,564	4,023	Dutch East Indies	1,150	1,046	607
China	2,514	290	828	China	911	138	251
Philippine Islands	1,953	2,373	2,448	Kwantung L. T.	904	286	1,874
Straits Settlements	1,948	3,388	2,806	Philippine Islands	658	102	36

	1938	1937	1936		1938	1937	1936
Kwantung L. T.	15,168	6,122	3,856	Canea, Uganda and			
China	13,839	2,951	2,461	Tanganyika	151	315	142
Great Britain	4,962	12,141	3,301	Siam	144	270	307
Manchoukuo	4,299	1,536	1,313	France	133	426	317
Asiatic Russia	1,636	1,687	1,082	French Indo-China	131	232	270
British India	1,242	1,533	1,123	Cotton yarn	39,355	54,906	38,345
Union of South				British India	20,502	19,846	18,051
Africa	534	1,169	1,016	Dutch East Indies	7,419	13,790	5,489
Netherland	418	660	462	Manchoukuo	3,232	8,334	6,391
Australia	355	383	308	Philippine Islands	1,134	1,761	1,259
Belgium	333	781	596	Hong-Kong	716	3,625	1,640
Straits Settlements	206	627	469	China	626	1,025	279
U. S. A.	159	622	521	Australia	372	235	391
Woolen tissues	46,845	50,082	45,956	Kwantung L. T.	368	1,423	447
Manchoukuo	11,651	3,800	1,052	Siam	269	543	994
Kwantung L. T.	11,529	11,903	13,187	Glass and manufac-			
China	9,508	3,823	3,616	tures	25,836	33,572	25,627
British India	3,460	9,884	5,254	British India	5,492	7,215	5,817
Egypt	1,458	4,671	4,051	Dutch East Indies	2,676	3,436	2,206
Knitted goods	40,818	60,713	49,988	China	2,015	1,161	1,319
Dutch East Indies	6,088	7,602	4,426	U. S. A.	1,857	4,543	3,059
Philippine Islands	4,024	5,015	5,475	Manchoukuo	1,820	1,370	822
Manchoukuo	3,441	3,363	1,813	Kwantung L. T.	1,635	1,180	799
Great Britain	3,203	5,967	5,206	Australia	1,367	1,412	1,114
Union of South				Philippine Islands	1,130	1,991	1,330
Africa	2,579	3,180	2,711	Great Britain	963	890	488
British India	2,366	4,560	4,256	Union of South			
Kwantung L. T.	2,332	2,018	1,600	Africa	663	1,070	831
U. S. A.	1,462	6,849	6,784	New Zealand	462	446	366
Mozambique	969	1,083	892	Siam	279	763	728
Canea, Uganda and				Straits Settlements	260	1,337	1,087
Tanganyika	713	1,026	906	Mozambique	208	287	238
Straits Settlements	695	1,401	1,496	Hong-Kong	161	373	407
China	566	207	120	Canea, Uganda and			
Egypt	272	1,030	965	Tanganyika	129	258	158
Australia	175	140	70	French Indo-China	120	234	258
Potteries and Por-				Toys	24,991	42,295	36,459
celains	40,477	53,971	43,548	U. S. A.	6,093	16,521	13,689
U. S. A.	8,696	19,460	15,530	Great Britain	5,504	7,036	5,916
Kwantung L. T.	4,643	2,353	1,859	Australia	2,187	2,276	2,137
Manchoukuo	3,821	2,222	1,391	British India	1,715	2,787	2,784
Australia	2,915	2,599	2,291	Canada	1,262	1,664	1,081
Dutch East Indies	2,714	3,109	2,388	Netherlands	879	844	982
British India	2,580	4,240	3,696	Manchoukuo	671	436	310
China	2,453	1,146	1,127	Union of South			
Canada	1,235	2,038	2,025	Africa	638	1,067	891
Union of South				Dutch East Indies	500	1,132	959
Africa	1,009	1,259	1,144	New Zealand	434	551	419
Great Britain	888	1,171	1,275	Germany	431	190	252
Argentina	786	1,259	595	Argentina	406	562	425
Philippine Islands	628	1,431	1,148	Brazil	331	378	338
Netherlands	607	542	608	Philippine Islands	314	567	435
Brazil	576	1,036	461	Belgium	289	440	284
New Zealand	453	438	443	China	270	539	507
Egypt	415	364	495	Egypt	178	366	644
Mozambique	338	445	309	France	154	282	158
Straits Settlements	307	1,174	514	Straits Settlements	135	631	643
Germany	296	303	245	Refined Sugar	23,654	18,577	20,977
Hong-Kong	191	363	481	Kwantung L. T.	13,081	7,770	13,226
				China	7,309	8,298	5,826

	1938	1937	1936		1938	1937	1936
Manchoukuo	3,259	1,715	1,361	French Indo-China	238	80	119
Aquatic products	21,931	21,916	22,216	Beer	10,019	5,686	5,912
Kwantung L. T.	9,230	7,402	4,402	China	6,034	944	555
China	6,552	3,418	7,219	Kwantung L. T.	1,646	1,980	1,750
U. S. A.	3,370	3,973	2,811	British India	639	753	650
Manchoukuo	978	578	334	Manchoukuo	525	308	1,158
Hawaii	710	802	689	Hawaii	380	397	265
Philippine Islands	314	697	634	Buttons	9,730	13,737	11,635
Hong-Kong	134	2,016	2,436	Great Britain	1,837	3,047	2,566
Rayon yarn	17,888	44,803	29,174	British India	808	1,432	1,116
China	7,487	4,629	2,002	Netherlands	522	710	677
British India	4,274	23,154	8,747	Australia	516	669	596
Mexico	1,150	6,018	2,332	Manchoukuo	507	393	246
Kwantung L. T.	672	1,328	8,840	Argentina	506	620	306
Australia	550	518	1,223	Dutch East Indies	482	653	352
Lamps and acces-				Germany	457	353	415
sories	14,748	21,950	18,587	Belgium	445	680	414
Kwantung L. T.	2,949	1,916	1,116	China	380	318	364
U. S. A.	1,737	4,238	4,931	U. S. A.	343	575	818
China	1,613	520	502	Kwantung L. T.	220	153	150
Great Britain	1,453	2,895	2,459	Canada	133	116	89
Manchoukuo	1,191	592	389	Vegetable oils	8,572	23,662	35,496
Dutch East Indies	811	1,801	1,122	U. S. A.	5,638	18,956	31,665
British India	718	1,584	1,148	Kwantung L. T.	431	310	273
Canada	383	666	219	Germany	376	966	419
Australia	345	585	571	Great Britain	219	639	825
Hong-Kong	127	321	428	Australia	154	239	113
Philippine Islands	124	457	435	Soap	7,837	5,531	4,246
Tea	12,063	23,101	13,130	Manchoukuo	3,713	2,141	1,300
U. S. A.	4,316	7,750	5,549	Kwantung L. T.	2,090	1,154	1,138
Canada	641	1,226	1,097	China	1,500	432	535
British India	599	862	588	Rubber tyres	7,799	12,983	9,939
Kwantung L. T.	490	313	242	Kwantung L. T.	2,853	3,449	1,601
Hats and Caps	11,092	26,337	19,736	Manchoukuo	1,323	1,052	478
U. S. A.	3,081	8,479	5,233	China	1,251	2,132	2,010
Manchoukuo	973	1,192	786	British India	767	1,099	1,206
Kwantung L. T.	820	655	560	Dutch East Indies	403	1,503	1,449
China	801	1,884	1,642	Fish and whale oils	7,027	15,414	10,180
British India	536	1,736	1,247	U. S. A.	1,886	1,486	864
Great Britain	429	1,603	1,272	Germany	1,857	6,314	3,931
Union of South				Great Britain	1,116	1,531	922
Africa	401	768	913	Kwantung L. T.	578	562	450
Dutch East Indies	397	693	462	Netherlands	348	583	1,211
Australia	221	311	281	Australia	141	254	168
Argentina	166	140	122	Beans	6,972	9,330	7,060
Mozambique	142	263	229	Great Britain	2,706	4,739	4,463
Clothing and acces-				Germany	1,808	1,700	589
sories	10,167	15,535	11,853	Cotton towels	6,961	8,935	6,830
British India	3,515	4,048	3,202	Union of South			
U. S. A.	1,369	3,132	2,249	Africa	985	872	634
Great Britain	762	827	695	Australia	861	904	496
Australia	460	558	493	Siam	409	311	444
Manchoukuo	254	212	126	Kwantung L. T.	357	321	238
Philippine Islands	155	342	266	Dutch East Indies	238	593	536
China	121	108	231	Straits Settlements	100	387	418
Coal	10,147	9,927	10,356	Cement	6,411	6,836	8,002
Hong-Kong	3,216	3,564	4,023	Dutch East Indies	1,150	1,046	607
China	2,514	290	828	China	911	138	251
Philippine Islands	1,953	2,373	2,448	Kwantung L. T.	904	286	1,874
Straits Settlements	1,948	3,388	2,806	Philippine Islands	658	102	36

	1938	1937	1936		1938	1937	1936
Manchoukuo	625	13	59	Dutch East Indies	228	244	187
Straits Settlements	352	877	995	Netherlands	207	243	238
Canea, Uganda and Tanganyka	149	277	182	China	200	119	159
Cotton blankets	6,321	8,092	6,908	British India	192	327	243
Manchoukuo	2,547	821	693	Canada	135	205	129
Kwantung L. T.	957	325	161	Camphor	3,723	4,774	4,843
Siam	502	951	1,087	British India	1,405	1,447	1,415
Dutch East Indies	270	356	186	U. S. A.	1,040	1,490	1,736
Canea, Uganda and Tanganyka	163	391	552	France	252	269	350
Isinglass	6,201	6,761	5,574	Australia	135	154	113
Germany	1,201	1,060	542	Matches	3,304	2,103	2,174
U. S. A.	1,152	1,236	998	China	2,053	9	3
France	601	875	739	Kwantung L. T.	638	423	189
Great Britain	574	898	768	Philippine Islands	141	86	76
Australia	295	188	161	Waste cotton and silk	2,897	6,238	3,164
Dutch East Indies	285	533	441	Italy	735	1,567	471
China	185	145	136	Belgium	350	605	171
Straits Settlements	104	286	289	Great Britain	312	301	84
Insecticide	6,103	7,693	3,207	France	197	734	284
U. S. A.	5,275	6,879	2,885	U. S. A.	179	378	699
Plaits for hat making	5,901	7,876	5,798	Silk handkerchief	2,738	5,638	4,192
U. S. A.	3,640	4,880	3,593	U. S. A.	667	1,704	1,194
France	679	643	474	Great Britain	569	899	705
Great Britain	402	526	624	British India	359	834	835
Australia	189	249	220	Australia	163	110	93
Menthol	4,381	6,116	4,986	Canada	101	148	62
U. S. A.	2,688	3,276	2,406	Rice and paddy	2,265	2,306	2,367
British India	387	656	416	Canada	736	694	842
France	373	544	700	Peppermint oil	2,168	2,975	2,963
Germany	289	479	273	Germany	981	1,133	919
Great Britain	218	161	146	France	808	876	977
Brushes	4,078	6,917	5,633	Yellow copper	1,812	5,899	6,679
U. S. A.	830	2,715	2,063	Kwantung L. T.	1,223	666	349
Great Britain	479	731	744	Manchoukuo	346	164	107
Manchoukuo	412	232	138	British India	142	1,365	2,926
				Umbrellas	1,463	3,714	2,633
				Union of South Africa	131	233	167
				Manchoukuo	102	51	31

VALUE OF CHIEF COMMODITIES IMPORTED FROM VARIOUS COUNTRIES

Japan Proper and Karafuto

(In ¥ 1,000)

	1938	1937	1936		1938	1937	1936
Cotton and ginned cotton	436,835	851,163	850,452	Beans	102,076	92,547	82,601
U. S. A.	166,414	306,388	372,415	Manchoukuo	98,541	84,708	73,043
British India	113,331	363,635	315,061	China	2,184	3,635	4,593
China	71,790	23,610	22,778	Kwantung L. T.	918	435	304
Egypt	27,530	58,759	36,415	Wool	94,426	298,404	200,898
Canea, Uganda and Tanganyka	5,218	21,529	27,500	Australia	64,882	118,196	147,493
Turkey	1,478	291	2,439	New Zealand	8,272	42,822	18,316
Dutch East Indies	452	1,173	701	Argentina	5,946	17,713	6,562
				Union of South Africa	4,266	82,763	17,389

	1938	1937	1936		1938	1937	1936
China	3,327	382	611	Manchoukuo	5,587	1,273	298
Manchoukuo	2,478	527	269	British India	3,769	8,344	7,342
Chile	780	2,353	1,744	China	3,116	5,127	7,556
Great Britain	677	1,073	1,190	Great Britain	973	46	—
Coal	67,217	59,224	51,056	Dutch East Indies	399	1,279	546
Manchoukuo	27,951	29,958	26,660	Phosphorite	19,281	30,810	22,393
China	26,877	16,279	12,595	Egypt	5,879	10,022	7,044
French Indo-China	12,108	12,832	11,656	U. S. A.	4,725	7,760	5,499
Kwantung L. T.	231	60	58	Straits Settlements	4,148	4,186	3,292
Oil cakes	60,112	45,310	35,790	Wheat	9,557	29,604	33,651
Manchoukuo	49,946	29,662	20,137	Australia	4,008	15,623	17,392
Kwantung L. T.	8,056	6,870	6,975	Manchoukuo	3,198	1,961	1,759
China	1,937	6,143	7,651	China	442	178	2,104
Dutch East Indies	107	878	485	Argentina	424	2,068	—
India rubber and gutta percha	51,374	99,218	72,957	Wheat bran	8,932	10,653	8,724
Straits Settlements	25,184	41,566	23,662	Manchoukuo	6,678	6,004	1,733
Dutch East Indies	12,080	25,775	22,878	China	2,033	4,038	6,376
French Indo-China	1,364	8,371	4,075	Kwantung L. T.	221	610	616
Pulp for rayon and paper making	41,059	116,720	67,107	Sugar	5,241	18,806	20,928
U. S. A.	15,111	49,181	31,758	Dutch East Indies	5,189	17,724	19,767
Sweden	6,276	26,993	9,735	Meats	4,414	6,878	8,401
Norway	5,400	17,071	14,621	China	1,654	3,958	6,204
Canada	5,046	12,619	4,150	Australia	720	744	406
Finland	3,339	9,497	6,401	Manchoukuo	472	379	385
Czechoslovakia	132	1,157	391	Kwantung L. T.	303	406	435
Sulphate of ammonium, crude	31,710	20,191	33,930	Synthetic colours	3,838	16,928	11,404
Germany	14,639	6,349	15,607	Germany	1,711	12,313	6,983
Kwantung L. T.	12,298	7,315	5,718	Switzerland	477	2,227	1,664
Manchoukuo	841	1,957	4,110	U. S. A.	355	1,932	2,347
Seeds for oil making	28,790	43,612	44,873	France	261	418	371
Manchoukuo	17,069	19,206	23,508	Watches and parts	2,893	5,645	3,742
China	6,963	14,093	14,332	Switzerland	2,448	4,319	2,761
Dutch East Indies	2,268	5,062	3,765	U. S. A.	134	446	413
British India	161	2,459	1,129	Rice and paddy	2,808	4,033	5,098
Straits Settlements	114	662	501	Siam	2,800	3,757	4,620
Lumber	28,178	64,817	55,548	Electric motors and transformers	2,766	1,841	1,805
U. S. A.	9,770	30,077	32,184	U. S. A.	1,869	980	557
Philippine Islands	6,695	11,260	7,330	Germany	715	694	468
Canada	3,803	11,517	6,217	Woollen tissues	2,724	9,292	9,675
Dutch East Indies	2,282	2,477	2,012	Great Britain	2,613	8,971	9,389
British Borneo	1,980	3,198	4,306	Nitrate of soda, crude	2,558	3,630	7,158
Manchoukuo	1,294	660	298	Chile	2,272	3,032	4,398
Siam	1,236	3,102	1,773	Caustic soda, soda ash and natural soda	1,973	6,534	4,267
China	239	826	677	Manchoukuo	210	9	—
Asiatic Russia	189	1,005	107	Canea, Uganda and Tanganyka	154	844	1,281
Hides and skins	27,826	44,571	24,386	Leather	1,875	7,520	5,465
U. S. A.	10,954	9,396	3,972	British India	1,088	3,436	2,346
Argentina	6,883	5,871	1,391	U. S. A.	175	1,061	1,223
China	3,083	10,070	9,177	Germany	174	934	1,023
Australia	2,265	5,023	1,124	Printing paper	718	9,171	10,164
Manchoukuo	1,564	1,039	926	Canada	360	6,658	8,443
France	378	835	324	Norway	173	657	249
British India	205	2,323	659	Fats	431	1,949	1,644
Great Britain	110	385	458	Australia	301	1,147	747
Hemp, jute and Manila hemp	27,306	40,995	37,301	Woollen yarn	328	1,605	1,873
Philippine Islands	11,889	23,224	20,68	Great Britain	325	1,605	1,864
				Cotton tissues	236	793	984
				Great Britain	177	624	809

Important Foreign Trade Countries

Great Britain Early in the Meiji Era Great Britain, China, the United States and France were the most important countries for Japan's export trade. In the import trade Great Britain, China, France and the United States were the principal countries, in that order. With a rapid gain in the export of raw silk in 1879, the importance of export countries was changed to the United States, China, France and Great Britain, although no change was noted in their precedence as import countries. A change came over the precedence in import countries in 1893 and India became the largest exporting country to Japan, being followed by Great Britain, the United States and China in that order. This was due to the rapid growth of the Japanese spinning industry, for which Indian cotton was needed. But in 1937 India became the second and in 1938 the third in the order. At present Great Britain comes 8th in order of Japan's export trade and 9th in Japan's import trade. When British India is included, however, she stands next to the U.S.A. both in buying Japanese commodities and in selling her goods to Japan among third Powers.

The U.S.A. America's economic condition and her financial and tariff policy have a direct bearing on Japan's export trade and domestic economy, for Japan's trade with the United States is far in excess of that with any other country. The close Japan-American trade relations trace back to the visit of Commodore Matthew Perry to Japan in the 6th year of Kaei, 1853. In the early stage the trade volume was less than that of Great Britain and France, but in 1879 Japan's exports to that country gained to more than ¥10,000,000, and America became Japan's largest customer, a position she has since retained. In 1904 Japan's exports to America reached the ¥100,000,000 mark; in 1915 they amounted to ¥204,000,000, in 1919 to ¥828,000,000, and the record amount was ¥1,006,000,000 in 1925. In the following year the amount went off to ¥860,000,000, but this, as compared with the exports of ¥4,000,000 in 1874, was an increase by 215 times and was 40 per cent of Japan's total trade volume. Raw silk, silk textiles, refined tea, straw-braid, fancy mats and porcelain have been the principal exports from the very beginning. Imports from America increased in consonance with exports. In 1874 the value of imports was just over ¥1,000,000, but by 1905 this had advanced to ¥100,000,000, and in 1920 the amount

set an all-time record of ¥873,000,000. The 1926 figure of ¥680,000,000 was 680 times the 1874 trade volume and was 26 per cent of Japan's total import value of that year. Imports from America consist of raw cotton, kerosene oil, wheat, machinery and iron. The most unique feature of the Japan-American trade is that the trade balance has been mostly in favour of Japan. In the last 67 years of trade relations the last 7 only, 1932, 1933, 1934, 1935, 1936, 1937, and 1938 have shown a continuous unfavourable balance to Japan, before that only five out of sixty were unfavourable, 1900, 1905, 1918, 1920-1921. In 1938 the total volume of Japan-American trade comprised 25.0 per cent of the total of Japan's foreign trade in that year.

China It is only natural that Japan, with its close proximity to China, should look to that country with its population of 400,000,000 persons and rich in natural resources as a market for its products and manufactures as well as for supplies of materials for its industries. The friction between this uncontrollable demand of Japan and the growing racial consciousness of the Chinese, however, brought about various political differences, and finally led to the Sino-Japanese War of 1894, the Manchurian Incident of 1931 and the Shanghai Affair of 1932. Boycotts of Japanese goods have been frequent.

Notwithstanding these political obstacles, the trade between the two countries steadily progressed and in 1925 the trade total reached the record amount of ¥701,000,000 including ¥486,000,000 in exports and ¥215,000,000 in imports, as viewed from the Japanese side. China thus became the second largest market for Japanese goods, the development of China as an important market for Japanese goods, as achieved by that time, may be illustrated by the following table:

China's Share in Japan's Foreign Trade

	Proportion of Exports to China to Total Exports	Proportion of Imports from China to Total Imports
1894	8.0	9.9
1908	16.0	11.7
1912	21.8	8.9
1916	17.1	14.4
1921	22.9	11.9
1926	20.6	10.1

A strong anti-Japanese sentiment began to sweep China about this time and trade began to fall off until it reached its climax after the northern expedition of the Nationalist armies in 1930. An

Illustration of these changes may be obtained from the following table:

	Exports to China	Imports from China
	(In ¥)	
1926	421,861,000	239,410,000
1927	334,183,000	226,034,000
1928	373,141,000	234,556,000
1929	346,652,000	209,975,000
1930	260,825,000	161,666,000
1931	143,876,000	103,749,000

Even in 1930 when the northern expedition ended in success for the Nanking Government and the movement of the Chinese for their racial resuscitation was at its zenith, Asia still held an important position as a market for Japan's principal manufactures, chiefly cotton goods, consuming 42.6 per cent of Japan's total exports of this kind. In this consumption, China and the Kwantung Leased Territory and Hong-Kong shared 24.7 per cent. Furthermore, almost all the remainder consumed in other parts of Asia was handled by Chinese traders.

The Manchurian Incident, 1931, enabled Japan to get the lion's share in the foreign trade of Manchoukuo, about 71 per cent in the imports of the new State during 1935 and 51 per cent in

the exports during the same year, but on the other hand, combined with the Shanghai Affair, it intensified the anti-Japanese movement in China. Increases in China's tariffs on Japanese goods were also effected in rapid succession, thus dealing a great blow to Japan's trade with China and at the same time furnishing a chance for the United States, Great Britain and Germany to recover their commercial influence of former years in that country. But the trade relation is improving since 1936 with the increase of Japanese influence in that country as a consequence of the China Affair.

TRADE WITH CHINA AFTER THE MANCHURIAN INCIDENT

	(In ¥1,000)		
	Export	Import	Balance
1932	129,478	77,175	52,303
1933	108,253	113,357	5,104
1934	117,062	119,573	2,511
1935	148,788	138,817	14,971
1936	159,690	154,837	4,853
1937	179,251	143,636	35,615
1938	312,900	164,611	148,289

Note: The underlined figures under the heading of "Balance" denote excess of import while others denote excess of export.

AMOUNT OF EXPORTS TO VARIOUS COUNTRIES

	(In ¥1,000)						
	1932	1933	1934	1935	1936	1937	1938
ASIA:							
Manchoukuo	25,947	62,071	107,151	126,045	150,859	216,092	316,323
China	129,478	108,253	117,062	148,788	159,691	179,251	312,900
Kwantung L. T.	120,584	221,068	295,868	300,269	347,165	395,916	536,317
British India	192,492	205,154	258,220	275,637	259,108	299,367	188,040
Hong-Kong	18,141	23,419	33,497	49,731	58,445	49,150	16,754
Straits Settlements	25,549	46,133	63,320	48,536	58,770	67,433	20,696
Asiatic Russia	13,065	12,090	11,366	26,181	22,993	23,851	4,715
French Indo-China	2,343	3,680	2,654	4,020	—	—	3,082
Dutch East Indies	100,254	157,487	158,450	143,041	129,495	200,051	104,145
Philippines	22,362	24,050	36,460	48,058	51,840	60,348	32,599
Siam	8,581	18,124	28,048	40,258	43,028	49,382	39,269
Aden	8,307	7,193	9,353	13,208	13,851	14,177	8,534
Syria	—	—	11,699	12,559	13,078	19,250	12,539
Iraq	—	—	17,166	22,073	19,019	23,644	17,082
Ceylon	—	—	19,792	11,887	13,840	18,656	14,620
Others and total	677,613	930,636	1,169,503	1,304,433	1,370,970	1,645,915	1,664,725
EUROPE:							
Great Britain	59,658	87,849	109,269	119,458	147,309	168,297	134,972
France	21,358	38,736	38,813	42,467	43,475	47,208	36,814
Germany	9,098	12,411	19,677	26,766	35,054	43,261	33,015
Italy	5,660	6,167	9,579	6,988	4,468	7,111	3,256
Belgium	4,160	7,739	9,675	15,393	16,230	20,650	10,151
Netherlands	12,445	12,325	17,882	18,316	15,385	18,440	11,470
Russia	1,379	1,575	1,638	2,138	8,357	—	—
Norway	465	1,608	2,828	4,482	6,172	8,901	4,561
Sweden	1,610	3,259	6,113	6,784	8,821	11,545	8,277
Spain	910	1,844	1,749	3,546	—	—	—
Turkey	5,964	2,431	2,194	3,241	—	—	2,659

FOREIGN TRADE

	1932	1933	1934	1935	1936	1937	1938
Denmark	1,412	1,412	1,262	1,359	—	—	1,361
Greece	330	1,095	1,059	1,128	—	—	507
Portugal	344	529	572	1,062	—	—	1,225
Palestine	—	—	6,412	8,400	5,377	5,745	3,087
Czechoslovakia	31	26	40	78	—	—	471
Others and total	125,748	182,078	227,772	262,705	307,718	356,299	261,018
AMERICA:							
United States	445,147	492,237	398,928	535,515	594,251	639,428	425,123
Canada	8,562	6,580	8,666	7,977	14,553	20,036	15,244
Mexico	638	1,491	4,009	5,464	7,190	13,622	3,317
Cuba	962	3,328	9,986	5,047	—	—	1,347
Salvador	394	684	2,289	71	—	—	—
Colombia	—	—	9,005	7,832	—	—	—
Panama	551	1,110	4,250	6,150	9,546	—	6,228
Peru	841	3,899	6,879	6,961	6,256	6,344	5,760
Chile	286	1,475	7,459	6,647	7,426	10,742	6,129
Argentina	7,553	12,261	20,013	28,603	22,712	42,481	19,607
Brazil	1,330	2,765	3,064	5,925	8,840	17,305	10,388
Uruguay	422	2,451	6,964	5,676	7,891	10,106	3,988
Haiti	—	—	8,493	6,803	—	—	—
Venezuela	—	—	1,970	3,565	7,814	9,139	5,480
Others and total	472,229	545,710	512,367	652,786	718,859	824,005	529,971
ALL OTHERS:							
Australia	36,895	51,416	64,461	74,793	68,763	72,080	69,388
Union of South Africa	16,418	26,740	29,539	32,769	41,534	53,749	35,289
Canea, Uganda and Tanganyika	—	—	22,329	25,083	30,602	40,122	22,504
Anglo Egyptian Sudan	—	—	9,429	13,034	11,915	15,811	11,895
Mozambique	—	—	8,822	10,752	10,860	16,055	9,830
Belgian Congo	—	—	—	1,720	7,649	16,474	6,927
Nigeria	—	—	2,430	4,737	7,011	14,683	4,084
Egypt	41,876	55,607	72,988	53,800	40,907	32,772	13,997
Hawaii	6,676	6,484	5,526	7,242	9,299	—	9,774
New Zealand	2,993	6,452	8,587	11,304	16,740	19,358	14,808
French Morocco	—	—	19,076	18,813	20,512	18,283	18,727
Others and Total	132,973	206,618	262,282	279,021	295,430	349,199	233,963
Optional cargo	1,428	—	—	—	—	—	—
Total Exports	1,409,992	1,861,045	2,171,924	2,499,072	2,692,976	3,175,418	2,689,677

AMOUNT OF IMPORTS FROM VARIOUS COUNTRIES

(In ¥ 1,000)

	1932	1933	1934	1935	1936	1937	1938
ASIA:							
Manchoukuo	25,999	147,897	164,211	191,005	205,567	249,071	339,217
China	102,746	113,357	119,573	133,817	154,838	143,636	164,611
Kwantung L. T.	76,719	20,161	27,279	25,517	33,848	45,188	60,323
British India	116,865	204,737	289,672	305,646	372,009	449,486	172,231
Hong-Kong	977	3,093	1,481	2,835	3,282	5,332	1,308
Straits Settlements	25,338	38,771	63,320	40,647	41,174	67,796	54,167
Asiatic Russia	31,078	31,042	32,753	3,401	6,808	3,902	380
French Indo-China	5,692	9,909	10,620	15,011	20,155	27,012	20,301
Dutch East Indies	40,409	55,709	63,464	78,186	113,546	153,450	88,249
Philippines	9,764	14,185	18,890	23,948	36,266	45,194	35,630
Slam	11,198	12,255	1,540	5,458	8,753	13,571	4,951
Aden	1	10	27	364	362	1,357	547
British Malaya	—	—	—	28,495	39,125	47,795	46,801
Others and total	450,911	658,557	812,090	869,871	1,060,189	1,295,114	1,023,532
EUROPE:							
Great Britain	78,760	82,558	70,036	82,160	72,942	105,772	63,157

TRADE WITH EACH COUNTRY

	1932	1933	1934	1935	1936	1937	1938
France	21,094	21,745	18,299	19,798	19,898	27,885	13,502
Germany	71,742	95,797	109,583	120,817	115,500	176,363	171,170
Italy	3,972	6,035	3,461	5,831	3,766	4,416	5,842
Belgium	6,133	14,693	17,226	24,562	16,019	41,059	15,441
Austria	1,549	2,473	3,542	4,409	4,263	9,104	10,271
Switzerland	12,105	9,185	10,925	13,455	14,000	19,239	30,198
Netherlands	3,879	3,717	3,652	5,873	4,556	7,030	3,938
Russia	1,357	5,717	8,055	14,503	14,526	9,642	—
Norway	5,956	11,624	14,279	19,940	17,853	24,033	15,719
Sweden	9,826	16,085	21,140	23,074	23,109	49,277	24,069
Spain	2,273	3,629	2,851	4,548	2,147	2,432	—
Turkey	139	976	1,973	1,036	4,475	2,818	3,712
Iraq	—	—	—	1,258	2,882	9,028	6,114
Finland	—	—	—	5,053	6,576	9,643	3,472
Portugal	1,303	1,515	1,448	1,474	1,680	2,429	1,865
Poland	1,638	947	267	1,287	3,824	4,640	2,671
Czechoslovakia	1,454	1,702	1,755	2,331	2,929	5,508	3,413
Others and total	225,261	282,812	295,623	352,276	330,123	504,001	376,266
AMERICA:							
United States	509,873	620,778	769,359	809,644	847,490	1,269,542	915,354
Canada	39,504	46,891	54,093	52,531	73,179	104,092	91,260
Mexico	319	188	189	6,443	18,680	14,262	4,518
Peru	41	1,553	1,822	11,414	13,000	6,277	1,975
Chile	781	2,962	3,438	4,472	9,953	14,719	11,152
Argentina	2,719	6,738	12,128	16,370	29,989	42,018	24,356
Brazil	754	1,008	3,291	4,006	47,352	62,810	46,174
Uruguay	173	317	2,630	4,494	9,528	33,926	4,158
Others and total	554,738	681,012	848,295	913,124	1,054,765	1,555,628	1,105,167
ALL OTHERS:							
Australia	134,277	204,586	197,757	235,128	181,914	165,252	82,875
Union of South Africa	2,635	4,312	8,233	4,762	22,561	88,852	9,558
Canea, Uganda and Tanganyika	—	—	15,188	2,955	29,865	24,155	4,269
Italian Somaaland	—	—	—	2,357	2,879	2,608	3,216
Society Islands	—	—	—	3,279	3,444	3,239	—
Egypt	19,787	26,455	46,259	51,304	45,737	74,118	36,315
New Zealand	1,470	2,399	11,594	6,363	21,973	48,633	10,210
Others and total	167,372	259,797	293,869	318,103	318,641	428,434	158,472
Bonded	33,180	35,039	32,723	18,861	—	—	—
Total Imports	1,431,461	1,917,219	2,282,601	2,472,235	2,763,681	3,783,177	2,663,437

TRADE BY COUNTRIES

(In ¥ 1,000)

		Manchoukuo					
From Japan	Unit	Quantities			Value		
		1938	1937	1936	1938	1937	1936
Cotton tissues	(1,000 sq. yards)	135,157	212,210	223,775	38,060	55,748	47,221
Machinery and parts	—	—	—	—	30,384	14,835	6,370
Rayon tissues	(1,000 sq. yards)	17,029	7,188	2,189	17,029	2,574	842
Wheat flour	(100 kin)	1,198,597	231,900	736,486	15,748	2,560	9,013
Woollen tissues	(1,000 sq. yards)	6,115	2,609	991	11,651	3,800	1,052
Iron manufactures	—	—	—	—	10,413	5,288	2,699
Paper	(100 kin)	371,068	262,960	144,293	8,857	5,931	3,008
Scientific machinery	—	—	—	—	4,927	3,751	2,024
Lumber	—	—	—	—	4,299	1,536	1,313
Potteries	—	—	—	—	3,821	2,222	1,391
Soap	—	—	—	—	3,713	2,141	1,300
Knitted goods	(1,000 dozens)	643	634	449	3,441	3,363	1,813

	Unit	Quantities			Value		
		1938	1937	1936	1938	1937	1936
Refined sugar	(100 kin)	293,775	216,087	193,222	3,259	1,715	1,361
Cotton yarn	(")	32,569	82,727	74,863	3,232	8,334	6,391
Cotton blankets	(")	35,277	12,055	12,841	2,547	821	693
Comestibles in tin and bottle	(")	110,881	51,080	32,970	2,450	1,202	670
Electrical wires	(")	20,400	12,118	7,839	2,124	936	472
Saké	(koku)	16,971	11,809	9,092	1,994	1,246	974
Leather	(100 kin)	4,868	2,028	3,443	1,831	348	477
Glass and glass manufactures		—	—	—	1,820	1,370	822
Wooden goods		—	—	—	1,580	1,015	612
Dyes	(100 kin)	30,279	19,753	16,455	1,578	565	454
Silk tissues	(1,000 sq. yards)	1,690	322	555	1,494	393	681
Books and journals		—	—	—	1,433	911	761
Rubber tires	(100 kin)	12,149	11,861	5,653	1,323	1,052	478
Oranges	(")	213,231	170,212	141,192	1,232	771	743
Lamps and parts thereof		—	—	—	1,191	592	389
Cotton threads	(")	7,853	5,384	3,041	1,125	681	349
Aquatic products	(")	66,663	59,114	27,869	978	578	334
Hats and caps	(1,000 dozens)	167	212	161	973	1,192	786
Total including others		—	—	—	316,323	216,092	150,859
To Japan							
Beans and peas	(100 kin)	13,498,756	11,229,037	10,948,910	98,641	84,708	73,043
Oil cake	(")	9,445,028	5,810,438	4,851,231	49,946	29,662	20,137
Coal	(1,000 gr. tons)	1,440	2,241	2,237	27,951	29,958	26,660
Oil yielding seeds	(100 kin)	1,659,893	1,809,472	2,602,951	17,069	19,206	23,508
Wheat bran	(")	1,538,458	1,528,111	539,706	6,678	6,004	1,733
Paper and paper manufactures		—	—	—	6,480	69	27
Chemicals		—	—	—	5,782	4,511	5,916
Hemp, jute, etc.	(100 kin)	170,171	60,945	26,297	5,587	1,273	298
Wheat	(")	298,172	205,988	236,149	3,191	1,961	1,759
Wool	(")	21,458	2,969	4,578	2,478	527	269
Hides and skins	(")	13,727	14,682	16,530	1,564	1,039	926
Lumber		—	—	—	1,294	660	298
Animal hair	(")	5,124	2,806	2,656	1,264	1,502	846
Total including others		—	—	—	339,217	246,071	205,567

Kwantung Leased Territory

From Japan							
Machinery and parts		—	—	—	75,807	46,584	41,166
Iron manufactures		—	—	—	22,786	12,590	6,718
Wheat flour	(100 kin)	1,679,160	1,047,577	1,065,858	21,901	11,669	8,832
Rayon tissues	(1,000 sq. yards)	49,553	39,334	56,630	20,243	15,612	21,494
Papers	(100 kin)	1,004,831	846,708	684,844	19,393	13,814	9,699
Scientific machinery		—	—	—	18,808	9,041	9,922
Cotton tissues	(1,000 sq. yards)	58,328	117,609	127,097	17,389	29,426	28,331
Lumber		—	—	—	15,168	6,122	3,856
Electrical wires	(100 kin)	141,808	132,664	99,726	13,636	10,112	5,975
Refined sugar	(")	1,271,668	1,001,814	1,790,225	13,168	7,770	13,226
Woollen tissues	(1,000 sq. yards)	5,530	7,262	9,999	11,529	11,903	13,187
Aquatic products	(100 kin)	542,082	674,339	221,153	9,230	7,402	4,402
Comestibles in tin and bottle	(")	255,560	151,884	76,663	7,228	3,902	1,916
Potteries		—	—	—	4,643	2,353	1,859
Silk tissues	(1,000 sq. yards)	2,907	1,853	3,107	4,049	2,839	3,474
Saké	(koku)	29,456	25,503	17,794	3,026	2,575	1,975
Lamps and parts		—	—	—	2,949	1,916	1,116
Rubber tires	(100 kin)	28,489	31,801	18,187	2,853	3,449	1,601
Wooden goods		—	—	—	2,764	1,746	1,331
Copper	(")	300,968	113,431	54,978	2,701	8,309	2,786

	Unit	Quantities			Value		
		1938	1937	1936	1938	1937	1936
Knitted goods	(dozen)	489,626	481,725	445,201	2,332	2,018	1,600
Soap		—	—	—	2,090	1,154	1,138
Beer	(koku)	41,481	52,680	41,466	1,646	1,980	1,750
Glass and glass manufactures		—	—	—	1,635	1,180	799
Oranges		283,034	249,848	377,044	1,591	1,500	2,123
Drugs		—	—	—	1,587	1,242	1,495
Cakes	(100 kin)	46,287	47,850	35,897	1,324	1,234	1,036
Brass	(")	10,632	9,320	8,394	1,223	666	349
Cotton blankets	(")	9,229	3,605	2,806	957	235	161
Cement	(")	763,186	220,465	1,786,646	904	286	1,874
Total including others		—	—	—	536,317	395,916	347,165
To Japan							
Chemicals		—	—	—	14,897	6,701	6,397
Salphate of ammonium, crude	(100 kin)	1,968,443	1,256,909	976,733	12,298	7,315	5,718
Oil cake	(")	1,382,337	1,276,743	1,595,716	8,056	6,870	6,975
Salt	(")	5,250,455	7,671,933	7,177,932	7,241	6,902	3,714
Potteries		—	—	—	1,277	726	906
Beans and peas	(")	90,392	44,077	28,762	918	435	304
Total including others		—	—	—	60,323	45,198	33,848
China							
From Japan							
Machinery and parts		—	—	—	35,925	24,152	16,936
Cotton tissues	(1,000 sq. yards)	110,644	44,900	37,330	23,911	11,296	7,861
Wheat flour	(100 kin)	1,880,771	1,283,384	89,965	23,062	15,249	620
Paper	(")	729,946	302,009	409,329	16,149	6,940	7,413
Lumber		—	—	—	13,839	2,951	2,460
Comestibles in tin and bottle	(")	348,322	31,027	8,844	9,865	854	338
Woollen tissues	(1,000 sq. yards)	5,547	2,780	2,915	9,508	3,823	3,616
Saké	(koku)	81,574	19,785	3,245	8,730	1,980	339
Rayon	(100 kin)	64,305	41,113	22,230	7,487	4,629	2,002
Refined sugar	(")	701,882	1,159,358	905,175	7,309	8,298	5,826
Rayon tissues	(1,000 sq. yards)	20,861	5,164	1,690	6,883	1,334	492
Aquatic products	(100 kin)	368,832	280,479	692,489	6,552	3,418	7,219
Iron manufactures		—	—	—	6,357	2,668	2,967
Beer	(")	149,011	23,523	12,679	6,034	944	555
Scientific machinery		—	—	—	4,224	1,870	2,234
Electric wires	(")	38,436	37,597	37,044	3,599	2,267	1,619
Vegetables and fruits		—	—	—	2,814	1,103	1,211
Coal	(gram. ton)	164,086	34,820	106,968	2,514	290	828
Potteries		—	—	—	2,453	1,146	1,127
Dyes	(100 kin)	37,763	21,979	40,943	2,219	1,240	1,562
Matches	(")	102,453	339	141	2,053	9	3
Cakes	(")	69,245	40,253	5,088	2,050	1,373	110
Glass and glass manufactures		—	—	—	2,015	1,161	1,319
Lamps and parts		—	—	—	1,613	520	502
Soap		—	—	—	1,500	432	535
Rubber tires	(100 kin)	12,725	22,683	22,975	1,251	2,132	2,010
Drugs		—	—	—	1,154	502	456
Cement	(")	1,260,996	220,827	375,846	911	138	251
Total including others		—	—	—	312,900	179,251	159,691
To Japan							
Cotton ginned	(100 kin)	1,432,414	400,824	463,944	71,790	23,610	22,778
Coal	(1,000 gram. ton)	1,621	1,287	1,018	26,877	16,279	12,595
Salt	(100 kin)	8,407,199	6,613,104	4,250,666	8,395	4,615	3,084
Oil-yielding seeds	(")	846,651	1,884,510	1,955,637	6,963	14,093	14,332

	Unit	Quantities			Value		
		1938	1937	1936	1938	1937	1936
Wool	(100 kin)	44,000	2,984	5,095	3,327	382	611
Waste fibres	(")	146,418	86,235	155,712	3,211	2,654	4,058
Hemp and Vegetable fibres	(")	117,648	215,738	387,876	3,116	5,127	7,556
Hides and skins	(")	50,832	161,814	201,105	3,083	10,070	9,177
Beans and peas	(")	221,372	441,354	653,049	2,184	3,635	4,593
Wheat bran	(")	529,332	1,022,376	1,966,028	2,033	4,038	6,376
Oil cake	(")	394,739	1,293,534	2,004,822	1,957	6,143	7,651
Animals hair	(")	4,666	13,656	19,840	1,774	4,871	6,039
Cocoons	(")	7,224	2,314	5,350	1,703	261	482
Beef	(")	40,072	109,780	186,117	1,654	3,958	6,204
Total including others		—	—	—	164,611	143,636	154,838

Hong-Kong

From Japan							
Cotton tissues	(1,000 sq. yards)	23,091	84,657	49,384	4,586	9,436	15,102
Coal	(gram. ton)	247,106	384,306	424,560	3,216	3,564	4,023
Rayon tissues	(1,000 sq. yards)	8,704	27,253	26,987	2,150	7,673	7,509
Total including others		—	—	—	16,754	49,150	58,445
To Japan							
Total		—	—	—	1,308	5,332	3,282

French Indo-China

From Japan							
Total		—	—	—	3,082	4,624	4,697
To Japan							
Coal	(gram. ton)	607,633	819,330	869,394	12,108	12,832	11,656
India Rubber	(100 kin)	20,666	91,277	59,988	1,364	8,371	4,075
Total including others		—	—	—	20,301	27,012	20,152

Siam

From Japan							
Cotton tissues	(1,000 sq. yards)	79,946	71,411	72,186	14,905	10,089	13,620
Rayon tissues	(")	5,984	12,079	16,768	1,569	3,522	4,440
Total including others		—	—	—	39,269	49,382	43,021
To Japan							
Rice and paddy	(100 kin)	377,287	520,590	882,218	2,800	3,757	4,820
Lumber		—	—	—	1,236	3,102	1,773
Total including others		—	—	—	4,951	13,571	8,757

Straits Settlements

From Japan							
Cotton tissues	(1,000 sq. yards)	26,294	51,785	48,367	5,053	12,231	9,188
Rayon tissues	(")	7,775	11,258	9,683	2,207	3,632	2,848
Tin ore	(100 kin)	14,737	14,303	12,944	2,049	1,577	1,362
Coal	(gram. ton)	151,449	322,181	270,632	1,948	3,388	2,806
Silk tissues	(1,000 sq. yards)	1,812	7,195	5,954	1,122	4,597	3,613
Total including others		—	—	—	20,696	67,433	58,770
To Japan							
India rubber	(100 kin)	386,422	433,938	346,425	25,184	41,566	23,682
Phosphorite	(")	1,574,747	1,738,087	1,640,451	4,148	4,186	3,290
Total including others		—	—	—	54,168	67,796	41,174

British India

	Unit	Quantities			Value		
		1938	1937	1936	1938	1937	1936
From Japan							
Cotton tissues	(1,000 sq. yards)	469,880	331,191	479,677	67,879	63,041	72,517
Cotton yarns	(100 kin)	141,201	110,657	126,528	20,502	19,846	18,051
Rayon tissues	(1,000 sq. yards)	32,448	94,854	92,081	11,627	32,466	26,221
Silk tissues	(")	17,755	25,707	24,413	7,896	13,838	13,203
Machinery and their manufactures		—	—	—	5,794	6,443	2,969
Glass and glass manufactures		—	—	—	5,492	7,215	5,817
Rayon yarns	(100 kin)	42,802	231,858	106,686	4,274	23,154	8,747
Woollen yarns	(")	12,534	18,478	15,561	3,673	6,870	4,409
Jewelry for personal adornment		—	—	—	3,515	4,048	3,202
Woollen tissues	(1,000 sq. yards)	3,479	8,554	5,569	3,460	9,884	5,254
Iron manufactures		—	—	—	2,728	6,221	4,309
Potteries		—	—	—	2,580	4,240	3,696
Knitted goods	(1,000 dozens)	1,314	2,311	2,028	2,366	4,560	4,256
Toys		—	—	—	1,715	2,784	2,751
Raw silk	(100 kin)	2,358	10,993	7,281	1,520	8,460	3,872
Spun silk yarns	(")	2,997	11,716	10,461	1,465	3,685	4,492
Camphor	(")	7,460	7,207	7,391	1,405	1,447	1,415
Lumber		—	—	—	1,242	1,533	1,123
Papers	(")	177,366	198,445	144,005	1,123	1,613	1,025
Total including others		—	—	—	188,040	299,367	259,108
To Japan							
Cotton and ginned cotton	(100 kin)	3,096,085	7,016,238	6,726,944	113,331	363,635	315,061
Hemp and other vegetable fibres	(")	202,476	449,591	443,633	3,769	8,344	7,342
Leathers	(")	3,362	8,714	7,638	1,088	3,436	2,346
Total including others		—	—	—	172,231	449,486	372,009

Philippine Islands

From Japan							
Cotton tissues	(1,000 sq. yards)	32,677	44,174	44,314	6,053	12,057	7,680
Knitted goods	(1,000 dozens)	1,595	1,676	2,296	4,024	5,015	5,475
Rayon tissues	(1,000 sq. yards)	10,610	25,303	35,443	2,096	5,500	8,674
Coal	(1,000 gram. ton)	151	246	268	1,953	2,373	2,448
Cotton yarns	(100 kin)	13,147	17,925	13,938	1,134	1,761	1,259
Glass and glass manufactures		—	—	—	1,130	1,991	1,330
Total including others		—	—	—	32,599	60,348	51,840
To Japan							
Hemp and other vegetable fibres	(100 kin)	647,689	967,854	1,203,173	11,889	23,224	20,680
Lumber		—	—	—	6,695	11,260	7,330
Leaf tobacco	(")	17,230	17,605	12,394	915	959	709
Total including others		—	—	—	35,630	45,194	36,266

British Borneo

To Japan							
Oils, fats, waxes and manufactures thereof		—	—	—	9,173	11,969	9,279
Lumber		—	—	—	1,980	3,198	4,306
India rubber	(100 kin)	28,804	31,955	20,681	1,553	2,334	1,283
Total including others		—	—	—	13,832	18,776	15,753

British Malay Peninsula							
From Japan	Unit	Quantities		Value			
		1938	1937	1936	1938	1937	1936
Total		—	—	—	2,181	3,866	2,441
To Japan							
India rubber	(100 kin)	159,512	194,861	280,738	10,700	18,144	19,386
Total including others		—	—	—	46,801	47,795	39,125

Dutch East Indies							
From Japan	Unit	Quantities		Value			
		1938	1937	1936	1938	1937	1936
Cotton tissues	(1,000 sq. yards)	206,436	434,392	351,718	31,486	85,703	55,391
Cotton yarns	(100 kin)	66,296	92,138	46,147	7,419	13,790	5,489
Rayon tissues	(1,000 sq. yards)	26,688	46,780	51,556	7,202	11,490	11,633
Knitted goods	(1,000 dozens)	2,190	2,694	1,990	6,086	7,602	4,426
Iron manufactures		—	—	—	2,857	7,774	4,181
Potteries		—	—	—	2,714	3,109	2,388
Glass and glass manufactures		—	—	—	2,676	3,436	2,206
Lumber		—	—	—	1,636	1,687	1,082
Comestibles in tin and bottle	(100 kin)	95,778	148,301	104,574	1,584	2,285	1,530
Cement	(")	1,480,284	1,408,005	816,301	1,150	1,046	607
Machinery and parts		—	—	—	1,038	2,113	968
Total including others		—	—	—	104,145	200,051	129,495
To Japan							
India rubber	(100 kin)	181,653	276,419	331,207	12,080	25,775	22,878
Indian corns	(")	979,224	3,036,711	1,785,613	5,234	15,440	6,981
Sugar	(")	635,183	2,698,347	3,396,964	5,189	17,724	19,767
Lumber		—	—	—	2,282	2,477	2,012
Oil-yielding seeds	(")	287,294	613,692	519,982	2,268	5,062	3,765
Table-salt	(")	977,630	410,695	—	1,410	569	—
Copra	(")	87,618	98,347	106,136	909	1,595	1,152
Total including others		—	—	—	88,249	153,450	113,546

Iraq							
From Japan	Unit	Quantities		Value			
		1938	1937	1936	1938	1937	1936
Cotton tissues	(1,000 sq. yards)	53,613	47,623	55,438	9,797	10,875	10,449
Rayon tissues	(")	8,662	22,126	16,161	2,260	5,906	3,923
Total including others		—	—	—	17,082	23,644	19,019
To Japan							
Cotton	(100 kin)	60,838	32,909	1,051	3,324	2,373	75
Wheat	(")	188,609	283,489	133,531	1,423	2,214	880
Total including others		—	—	—	6,114	9,028	2,882

Great Britain							
From Japan	Unit	Quantities		Value			
		1938	1937	1936	1938	1937	1936
Comestibles in tin and bottle	(100 kin)	923,153	654,349	650,919	40,832	29,122	32,384
Raw silk	(")	33,609	34,674	28,938	26,175	31,430	23,628
Silk tissues	(1,000 sq. yards)	15,286	13,491	13,156	9,023	9,518	8,306
Toys		—	—	—	5,504	7,036	5,816
Lumber		—	—	—	4,962	12,141	3,301
Shawls	(100 kin)	9,224	2,982	1,314	4,251	1,784	818
Knitted goods	(1,000 dozens)	1,200	2,066	2,072	3,203	5,967	5,206

	Unit	Quantities		Value			
		1938	1937	1936	1938	1937	1936
Beans and peas	(100 kin)	205,523	293,605	327,713	2,706	4,739	4,463
Cotton tissues	(1,000 sq. yards)	16,587	24,155	19,059	2,677	4,775	2,985
Buttons	(1,000 gross)	3,860	7,573	6,762	1,837	3,047	2,566
Lamps and parts		—	—	—	1,453	2,895	2,459
Rags	(100 kin)	65,401	179,867	138,677	1,256	2,978	2,250
Tea	(")	29,347	80,157	32,170	1,147	4,156	1,561
Fish and whale oils	(")	53,156	106,946	72,864	1,116	1,531	922
Glass and glass manufactures		—	—	—	963	890	488
Celluloid	(")	7,079	10,267	11,867	940	1,197	1,212
Total including others		—	—	—	134,972	168,297	147,309

To Japan							
	Unit	Quantities		Value			
		1938	1937	1936	1938	1937	1936
Watches, scientific machinery and others		—	—	—	38,849	31,058	20,783
Ores and metals		—	—	—	11,295	33,989	14,386
Woollen tissues		—	—	—	2,613	8,971	9,389
Hemp and other vegetable fibres	(100 kin)	6,453	296	—	973	46	—
Total including others		—	—	—	63,157	105,772	72,942

France							
From Japan	Unit	Quantities		Value			
		1938	1937	1936	1938	1937	1936
Raw silk	(100 kin)	31,308	30,262	27,702	24,631	26,111	21,772
Comestibles in tin and bottle	(")	46,988	60,919	61,978	1,675	2,722	2,472
Silk tissues	(1,000 sq. yards)	3,169	2,612	2,736	1,515	1,673	1,443
Total including others		—	—	—	36,814	47,208	43,475
To Japan							
Ores and metals		—	—	—	2,987	7,887	1,297
Sulphate of potash, crude	(100 kin)	227,554	205,854	201,526	2,047	1,725	1,607
Total including others		—	—	—	13,502	27,885	19,898

Germany							
From Japan	Unit	Quantities		Value			
		1938	1937	1936	1938	1937	1936
Cotton tissues	(1,000 sq. yards)	20,003	20,269	26,846	3,115	4,048	4,086
Raw silk	(100 kin)	3,319	2,537	2,258	2,903	2,430	1,797
Fish and whale oils	(")	180,018	407,007	274,721	1,857	6,314	3,931
Beans and peas	(")	190,171	152,503	57,810	1,808	1,700	589
Silk tissues	(1,000 sq. yards)	2,268	2,614	1,711	1,449	1,464	851
Fish flour	(100 kin)	172,589	285,582	280,347	1,246	2,291	1,975
Isinglass	(")	4,483	3,949	2,571	1,201	1,060	542
Peppermint oil	(")	2,284	2,567	1,718	981	1,133	919
Waste silk, floss silk and duplon	(")	2,019	1,889	2,949	934	694	830
Total including others		—	—	—	33,015	43,261	35,065

To Japan							
	Unit	Quantities		Value			
		1938	1937	1936	1938	1937	1936
Sulphate of ammonium	(100 kin)	2,337	1,218	2,290	14,639	6,349	15,607
Sulphate of potash, crude	(")	1,602,795	2,125,063	977,166	14,522	17,891	7,673
Hops	(")	10,571	9,220	11,036	2,814	2,351	2,478
Synthetic colours	(")	2,250	27,014	18,818	1,711	12,313	6,983
Chloride of potash, crude	(")	182,504	579,860	103,037	1,348	4,837	826
Coal-tar distillates	(")	7,093	25,830	14,144	1,153	4,788	2,399
Total including others		—	—	—	171,170	176,363	115,500

		Italy					
		Quantities		Value			
From Japan	Unit	1938	1937	1936	1938	1937	1936
Total		—	—	—	3,256	7,111	4,468
To Japan							
Ores and metals		—	—	—	2,069	1,582	1,846
Total including others		—	—	—	5,843	4,416	3,766
		Switzerland					
From Japan							
Total		—	—	—	1,200	2,149	839
To Japan							
Ores and metals		—	—	—	11,273	842	2,030
Chemicals		—	—	—	6,447	1,733	1,596
Watches and parts thereof		—	—	—	2,443	4,319	2,761
Total including others		—	—	—	30,198	19,239	14,000
		Belgium					
From Japan							
Comestibles in tin and bottle (100 kin)		72,450	130,934	76,745	2,337	3,903	2,465
Total including others		—	—	—	10,151	20,650	16,230
To Japan							
Ores and metals		—	—	—	11,843	31,812	9,171
Sulphate of ammonium, crude (100 kin)		145,224	189,536	16,933	998	941	117
Total including others		—	—	—	15,441	41,059	16,019
		Holland					
From Japan							
Comestibles in tin and bottle (100 kin)		42,394	63,586	41,334	1,072	1,635	1,040
Total including others		—	—	—	11,456	18,440	15,385
To Japan							
Sulphate of ammonium, crude (100 kin)		329,898	275,390	—	2,179	1,182	—
Total including others		—	—	—	3,938	7,300	4,556
		Sweden					
From Japan							
Cotton tissues (1,000 sq. yards)		14,808	14,720	9,527	2,716	2,034	1,415
Buttons (1,000 gross)		669	1,082	960	318	528	477
Total including others		—	—	—	8,277	11,545	8,821
To Japan							
Scientific machinery		—	—	—	8,663	9,402	5,772
Total including others		—	—	—	24,069	49,277	23,109
		Norway					
From Japan							
Cotton tissues (1,000 sq. yards)		5,826	6,680	7,258	1,149	1,567	1,416
Total including others		—	—	—	4,561	8,901	6,172

		Quantities		Value			
		1938	1937	1936	1938	1937	1936
To Japan	Unit						
Ores and metals		—	—	—	8,596	4,425	2,172
Pulp	(100 kin)	307,269	1,052,406	944,566	5,400	17,071	14,621
Total including others		—	—	—	15,719	24,033	17,853
		Turkey					
From Japan							
Cotton tissues (1,000 sq. yards)		12,716	14,451	26,521	2,081	2,496	4,074
Total including others		—	—	—	2,650	2,753	4,293
To Japan							
Cotton and ginned cotton (100 kin)		39,854	5,467	48,945	1,478	291	2,439
Table salt (")		960,320	1,234,897	1,767,268	1,247	1,731	1,368
Total including others		—	—	—	3,712	2,818	4,475
		The U. S. A.					
From Japan							
Raw silk (100 kin)		293,274	379,977	427,624	297,882	325,225	333,949
Comestibles in tin and bottle (")		161,192	322,326	294,551	12,212	21,940	15,458
Potteries		—	—	—	8,696	19,460	15,530
Silk tissues (1,000 sq. yards)		21,122	27,444	19,339	7,402	11,531	7,544
Toys		—	—	—	6,093	16,521	13,689
Vegetable oil (100 kin)		273,978	667,739	1,155,621	5,638	18,956	31,663
Insecticide (")		66,419	131,739	84,346	5,275	6,879	2,885
Tea (")		92,152	126,728	110,745	4,316	7,750	5,548
Rags (")		260,449	844,978	984,816	4,015	9,512	9,723
Plaits for hat making (1,000 bundle)		10,681	15,204	12,149	3,640	4,780	3,593
Aquatic products (100 kin)		103,434	156,806	106,673	3,370	3,972	2,811
Rugs (1,000 sq. yards)		5,202	13,529	16,104	3,291	8,950	8,073
Hats and caps (1,000 dozens)		639	1,666	1,180	3,061	8,979	5,233
Menthol (100 kin)		2,382	3,632	2,325	2,688	3,271	2,406
Fish flour (")		332,415	904,406	779,694	2,590	7,068	5,027
Cotton tissues (1,000 sq. yards)		16,115	123,776	73,444	2,407	22,138	13,780
Table clothes (100 kin)		1,112	78,355	55,874	1,902	11,982	7,678
Fish and whale oils (")		41,125	33,866	27,596	1,886	1,486	864
Glass and glass manufactures		—	—	—	1,857	4,543	3,259
Lily Bulbs (1,000 pieces)		20,661	28,650	21,638	1,828	1,990	1,751
Lamps and accessories		—	—	—	1,737	4,238	4,931
Papers (100 kin)		8,418	16,734	15,349	1,497	1,773	1,116
Creosote (")		317,899	411,437	—	1,492	1,985	—
Knitted goods (1,000 dozens)		745	3,087	3,833	1,462	6,849	6,784
Jewelry for personal adornment		—	—	—	1,369	3,132	1,116
Isinglass (100 kin)		4,465	5,061	4,928	1,152	1,236	998
Camphor (")		5,624	6,735	8,585	1,040	1,490	1,736
Total including others		—	—	—	425,123	639,428	594,251
To Japan							
Ores and metals		—	—	—	262,866	472,417	121,919
Oils, fats, waxes & manufactures thereof		—	—	—	240,143	185,025	120,927
Cotton and ginned cotton (100 kin)		3,248,976	4,223,964	5,928,746	166,414	306,388	372,145
Scientific machinery		—	—	—	158,110	126,647	79,505
Electric motors and transformers (")		5,097	2,683	1,508	1,869	980	557
Telephonic instruments and parts thereof (")		—	—	—	1,504	1,074	515
Pulp for fibres (")		872,310	3,185,610	2,603,407	15,111	49,181	31,758
Hides and skins (")		201,113	112,301	72,301	10,954	9,396	3,972

Unit	Quantities			Value		
	1938	1937	1936	1938	1937	1936
Lumber	—	—	—	9,770	30,077	32,184
Chloride of potash, crude (..)	652,548	819,009	898,631	5,950	7,055	7,326
Phosphorite (..)	2,438,450	4,290,491	3,646,966	4,725	7,760	5,499
Rosin (..)	149,723	404,887	430,483	1,988	7,067	4,427
Carbon black (..)	63,274	99,192	75,919	1,753	2,914	2,157
Waste fibres (..)	80,307	147,224	118,745	1,475	3,524	2,829
Leaf tobaccos (..)	9,489	15,192	41,879	1,442	3,226	7,394
Total including others	—	—	—	915,354	1,269,542	847,453
Canada						
From Japan						
Toys	—	—	—	1,262	1,669	1,081
Potteries	—	—	—	1,235	2,038	2,025
Rayon tissues (1,000 sq. yards)	2,424	3,044	3,039	911	997	725
Total including others	—	—	—	15,244	20,036	14,554
To Japan						
Ores and metals	—	—	—	54,112	51,405	30,289
Pulp for fibre (100 kin)	284,278	879,390	469,888	5,046	12,619	4,150
Asbestos and manufactures (..)	363,104	503,997	248,975	5,028	5,956	3,005
Lumber	—	—	—	3,803	11,517	6,217
Total including others	—	—	—	91,260	104,692	73,179
Chile						
From Japan						
Cotton tissues (1,000 sq. yards)	21,036	36,403	32,845	4,289	7,951	6,021
Total including others	—	—	—	6,129	10,742	7,426
To Japan						
Ores and metals	—	—	—	7,777	8,643	2,285
Nitrate of soda, crude (100 kin)	389,754	596,108	807,622	2,272	3,032	4,398
Total including others	—	—	—	11,152	14,719	9,953
Argentina						
From Japan						
Cotton tissues (1,000 sq. yards)	66,544	131,010	82,169	13,130	29,196	14,780
Total including others	—	—	—	19,607	42,481	22,712
To Japan						
Hides and skins (100 kin)	117,551	80,886	27,678	6,883	5,871	1,391
Wool (..)	55,265	126,548	56,773	5,946	17,713	6,562
Tanning extracts (..)	214,578	207,680	149,361	4,425	4,078	2,817
Indian corn (..)	415,968	873,219	3,141,976	2,657	4,626	12,414
Ores and metals	—	—	—	1,121	1,484	519
Total including others	—	—	—	24,356	42,018	29,988
Brazil						
From Japan						
Woollen yarns (100 kin)	6,914	7,533	5,038	2,358	3,013	1,644
Raw silk (..)	1,971	3,359	1,316	1,977	2,918	1,120
Spun silk yarns (..)	930	379	977	937	232	594
Total including others	—	—	—	10,388	17,305	8,840
To Japan						
Ginned cotton (100 kin)	833,254	838,580	707,526	41,365	56,488	44,764
Coffee (..)	74,479	72,323	42,489	2,763	3,438	1,373
Total including others	—	—	—	46,174	62,810	47,352

Egypt						
Unit	Quantities			Value		
	1938	1937	1936	1938	1937	1936
From Japan						
Cotton tissues (1,000 sq. yards)	21,417	49,687	106,147	2,347	10,510	20,525
Leaf tobaccos (100 kin)	30,564	28,406	20,188	2,069	1,913	1,393
Silk tissues (1,000 sq. yards)	3,391	5,774	5,074	1,772	3,158	2,333
Woollen tissues (..)	950	2,823	3,167	1,458	4,671	4,051
Total including others	—	—	—	13,997	32,772	40,907
To Japan						
Seed cotton and ginned cotton (100 kin)	404,720	670,390	445,463	27,529	58,759	36,415
Phosphorite (..)	3,391,839	5,477,085	5,024,161	5,879	10,022	7,044
Total including others	—	—	—	36,315	74,118	45,737
Canea, Uganda & Tanganyika						
From Japan						
Cotton tissues (1,000 sq. yards)	85,071	103,098	100,386	15,882	23,003	18,724
Sarong (100 kin)	8,376	22,890	13,218	1,082	3,262	1,503
Total including others	—	—	—	22,504	40,122	30,602
To Japan						
Seed cotton and ginned cotton (100 kin)	63,844	275,902	396,732	3,467	21,529	27,500
Total including others	—	—	—	4,269	24,155	29,865
Union of South Africa						
From Japan						
Cotton tissues (1,000 sq. yards)	26,169	32,811	29,714	7,124	10,214	7,358
Woollen tissues (..)	2,674	2,647	2,691	4,283	5,584	3,440
Rayon tissues (..)	8,603	16,903	14,320	3,475	7,168	5,838
Knitted goods (1,000 dozens)	564	729	844	2,579	3,180	2,711
Silk tissues (1,000 sq. yards)	1,994	4,958	6,368	1,454	3,531	4,005
Potteries	—	—	—	1,009	1,259	1,144
Cotton towels (1,000 dozens)	285	300	208	985	872	634
Total including others	—	—	—	35,289	53,749	41,534
To Japan						
Wool (100 kin)	39,666	559,015	140,780	4,266	82,763	17,389
Tanning materials (..)	190,765	189,287	151,792	1,806	1,673	1,075
Cotton (..)	32,151	—	783	1,750	—	55
Total including others	—	—	—	9,558	88,852	22,561
Australia						
From Japan						
Rayon tissues (1,000 sq. yards)	40,657	42,344	58,061	17,303	16,667	18,415
Cotton tissues (..)	64,394	52,569	70,058	15,070	13,527	13,986
Raw silk (100 kin)	7,840	8,630	6,402	6,461	8,132	5,231
Potteries	—	—	—	2,915	2,599	2,291
Comestibles in tin and bottle (..)	46,775	55,142	20,713	2,464	2,489	946
Toys	—	—	—	2,187	2,276	2,137
Silk tissues (1,000 sq. yards)	2,404	3,228	5,830	1,923	2,664	4,076
Glass and glass manufactures	—	—	—	1,367	1,412	1,114
Total including others	—	—	—	69,388	72,080	68,763

FOREIGN TRADE

	Unit	Quantities			Value		
		1938	1937	1936	1938	1937	1936
To Japan							
Wool	(100 kin)	591,136	737,195	1,169,468	64,882	42,822	18,316
Ores and metals		—	—	—	7,933	18,833	10,163
Wheat	(..)	510,235	1,679,998	2,810,246	4,008	15,623	17,392
Hides and skins	(..)	42,551	73,128	23,525	2,265	5,023	1,124
Total including others		—	—	—	82,875	165,252	181,914
New Zealand							
From Japan							
Rayon tissues	(1,000 sq. yards)	8,988	13,117	14,210	3,318	4,621	4,151
Cotton tissues	(..)	9,590	11,209	12,287	2,493	3,044	2,838
Total including others		—	—	—	14,808	19,358	16,740
To Japan							
Wool	(100 kin)	85,671	296,050	179,455	8,272	42,822	18,316
Casein	(..)	31,596	42,529	42,595	920	2,344	1,738
Total including others		—	—	—	10,210	48,633	21,973

The Invisible Trade

The invisible foreign trade of Japan for 1936 showed an excess of payments as in the previous year according to

the report of the Finance Ministry, but the excess payments amounted only to ¥36,397,000 as compared with ¥193,326,000 in the previous year.

INVISIBLE FOREIGN TRADE OF JAPAN

(Compiled by the Ministry of Finance)

(In ¥1,000)

Items	1932	1933	1934	1935	1936
I Assets (Invisible Exports):					
(a) Ordinary receipts:					
Interest and dividends on foreign securities	19,362	23,806	22,517	26,509	34,425
Profit from undertakings abroad and remunerations for services rendered abroad	157,244	167,378	186,913	213,512	212,353
Receipts in connection with shipping	181,843	227,930	251,520	303,180	334,612
Insurance	117,258	117,570	138,518	128,629	137,476
Receipts from foreign nationals in Japan, tourists, missionaries, etc.	55,478	69,458	89,232	95,266	107,688
Government receipts from abroad	4,964	7,218	5,800	18,253	34,894
Others	41,267	51,120	93,730	35,204	26,612
Total	577,416	664,480	788,230	820,553	888,060
(b) Extraordinary receipts:					
Foreign capital invested in Japan	84,475	119,556	93,317	159,437	193,014
Collection of capital invested abroad	105,988	174,287	218,635	225,688	484,934
Total	190,463	293,843	312,006	385,125	677,948
Grand total	767,879	958,323	1,100,236	1,205,678	1,566,008
II Liabilities (Invisible Imports):					
(a) Ordinary Payments:					
Interest and dividends on Japanese securities possessed by foreign nationals	108,330	138,914	124,632	134,781	121,070
Profit of foreign undertakings and remunerations for foreign services in Japan	19,857	9,466	9,621	11,298	15,325

BALANCE OF INTERNATIONAL PAYMENTS

Payments in connection with shipping	82,142	101,868	106,906	125,520	140,750
Payments in connection with insurance	108,359	108,876	115,080	118,222	121,971
Expenditures abroad of Japanese tourists and travellers	39,852	68,462	65,791	68,942	70,507
Government expenditures abroad	89,182	128,008	141,696	159,975	164,526
Others	14,440	21,677	32,312	23,602	21,056
Total	462,162	577,271	596,042	642,340	655,205
(b) Extraordinary Payments:					
Investment abroad of Japanese capital	100,954	215,775	398,537	579,990	652,378
Collection of foreign capital invested in Japan	189,645	99,044	96,910	176,674	294,822
1932	1933	1934	1935	1936	
Total	290,599	314,819	495,447	756,664	947,200
Grand total	752,761	892,090	1,091,489	1,399,004	1,602,405
III Balance:					
(a) Excess of ordinary receipts	115,254	87,209	192,188	178,213	232,855
(b) Excess of extraordinary payments	100,136	20,976	183,411	371,539	269,252
Excess of receipts (+) or payments (-)	+15,118	+66,233	+8,747	-193,326	-36,397

Balance of International Payments
This table is based on the form re-

quired by the League of Nations and includes the figures for the foreign trade of Chosen and Taiwan.

BALANCE OF INTERNATIONAL PAYMENTS

(In Million yen)

CURRENT ITEMS.

INWARD OR CREDIT MOVEMENTS (Exports)

	1936	1935
I. Merchandise.		
1. Merchandise, including silver bullion and coins other than gold, exported	2,871.9	2,874.5
2. Adjustment of 1 in order to arrive at the commercial value f. o. b.	—	—
3. Contraband exports	—	—
Total	2,871.9	2,874.5
II. Interest and dividends.		
4. Interest received on intergovernmental debts n. e. i. (Inter-allied debts, etc.)	—	—
5. Interest received on other foreign Government and municipal loans	17.3	15.8
6. Yield of other long-term capital investments abroad:		
a. interest	12.1	5.9
b. dividends, profits, etc.	125.7	106.2
7. Interest received from short-term capital invested abroad	0.7	0.9
Total	155.8	128.8
III. Other services.		
8. Income of national ships on account of all foreign traffic (a):		
a. ordinary freights	279.0	247.8
b. charter money	0.2	0.5
c. passage money	26.7	26.3
9. Port receipts from foreign shipping in national ports	9.2	8.6

FOREIGN TRADE

	1936	1935
10. Transport and other charges received for foreign goods transhipped or in transit included in Item 8	—	—
11. Commissions, insurance, brokerage and similar receipts, n. e. i.	137.5	128.6
12. Post and telegraph and telephone earnings, n. e. i.	2.9	2.2
13. Funds brought in by immigrants and returned emigrants	—	—
14. Emigrants' remittances and money gifts from abroad, n. e. i.	100.5	121.8
15. Receipts from foreign tourists and travellers	87.8	77.4
16. Diplomatic, consular and similar expenditure in Japan	10.4	7.3
17. Receipts for services rendered in Japan for "persons" domiciled abroad, n. e. i.	—	—
18. Government receipts in cash on account of reparation payments:	—	—
a. amortisation	—	—
b. interest	—	—
19. Counter-value of reparation receipts in kind, included in merchandise imports below	—	—
20. Government receipts from abroad, n. e. i.	32.0	16.1
21. Other current items	9.9	11.2
Total	696.2	647.8
IV. Gold coin and bullion.		
22. Gold bullion and gold specie exported	—	—
23. Adjustment of 22 in order to arrive at the commercial value f. o. b.	—	—
24. Decrease in the amount of gold earmarked abroad for domestic account, or increase in the amount of gold earmarked in the country for foreign account	—	—
Total	—	—
Grand Total	3,723.8	3,651.1

OUTWARD OR DEBIT MOVEMENTS (Imports)

I. Merchandise.		
25. Merchandise, including silver bullion and coins other than gold, imported	2,966.4	2,722.6
26. Adjustment of 25 in order to arrive at the commercial c. i. f.	—	—
27. Contraband imports	—	—
Total	2,966.4	2,722.6
II. Interest and dividends.		
28. Interest paid on intergovernmental debts n. e. i. (Inter-allied debts, etc.)	—	—
29. Interest paid on other Government and municipal foreign debt	72.4	78.7
30. Yield of other foreign long-term capital invested in Japan:	—	—
a. interest	16.8	19.9
b. dividends, profits, etc.	32.3	34.0
31. Interest paid on foreign short-term capital invested in Japan	9.5	10.0
Total	131.0	142.6
III. Other services.		
32. Payments to foreign ships on account of traffic between domestic ports:	—	—
a. ordinary freights	14.7	10.7
b. charter money	—	—
c. passage money	—	—
33. Port expenses incurred by national shipping in foreign ports	70.0	65.0
34. Transport payments to foreign carriers, n. e. i.	—	—
35. Commission, insurance, brokerage and similar payments, n. e. i.	122.0	118.2
36. Post, telegraph and telephone payments, n. e. i.	5.1	4.6
37. Funds taken out by emigrants and returning immigrants	—	—
38. Immigrants' remittances and money gifts sent abroad, n. e. i.	6.2	4.3
39. Expenditure abroad by national tourists and travellers	58.3	55.2

INWARD OR CREDIT CAPITAL MOVEMENT

	1936	1935
40. Diplomatic, consular and similar expenditure abroad	11.4	12.9
41. Payments for services rendered abroad for "persons" domiciled in Japan, n. e. i.	—	—
42. Government payments in cash on account of reparations:	—	—
a. amortisation	—	—
b. interest	—	—
43. Counter-value of reparation deliveries in kind, included in merchandise exports above	—	—
44. Government expenditure abroad, n. e. i.	159.5	155.4
45. Other current items	50.1	49.8
Total	497.2	476.1
IV. Gold coin and bullion.		
46. Gold bullion and gold specie imported	—	0.1
47. Adjustment of 46 in order to arrive at the commercial value, c. i. f.	—	—
48. Increase in the amount of gold earmarked abroad for domestic account, or decrease in the amount of gold earmarked in the country for foreign account	—	—
Total	—	0.1
Grand Total	3,594.6	3,314.4
Surplus (+) or deficit (-) on account of:		
(a) goods and services (I—III)	(+) 129.3	(+) 309.8
(b) gold (IV)	0	(-) 0.1
(c) goods, services and gold (I—IV)	(+) 129.3	(+) 309.7

Note: (1) "n. e. i." means "not elsewhere indicated."

(2) (a) Foreign shipping traffic here means all traffic other than that between domestic ports. Maritime freight on imported goods, which is included in group I of imports, is unknown.

CAPITAL ITEMS.

INWARD OR CREDIT CAPITAL MOVEMENT

I. Long-term operations.		
1. Receipts on account of amortisation of intergovernmental debts n. e. i. (Inter-allied debts, etc.)	—	—
2. Receipts on account of amortisation of other foreign government and municipal loans	37.2	11.6
3. Receipts on account of amortisation of other loans	444.0	180.9
4. Existing domestic securities sold abroad	45.0	60.3
5. Foreign securities resold abroad	3.7	33.2
6. Real estate sold abroad { a. abroad	—	—
b. in Japan	—	—
7. Sale of new domestic securities on account of new loans floated abroad:	—	—
a. Government and municipal loans	—	—
b. Other loans	—	—
8. Sale of new domestic securities on account of foreign participation in domestic capital issues	(a) —	(a) —
9. Other foreign long-term capital invested in Japan	—	—
Total	530.0	286.0
II. Short-term operations.		
10. Net increase in foreign short-term debts on account of credits raised and repaid	—	83.0
11. Net decrease in foreign floating assets on account of short-term credits granted and repaid	94.3	90.2
Total	94.3	173.2
Grand Total	624.3	459.2

Customs Duties

It was in 1859, at the time when most of the early commercial treaties with the Western powers had been concluded, that custom-houses were for the first time established and customs duties were levied at a few open ports selected for the purpose. The customs tariff of that time was entirely determined by treaty; but the term of its operation was exceedingly short and the whole tariff was revised by treaty in 1866. This revised tariff kept our customs duties unchanged until 1899 when the treaties of commerce and navigation with the foreign powers came into operation.

The coming into effect from 1899 of the revised commercial treaties with the foreign powers made it possible to bring into operation the general tariff which, combined with the conventional tariffs newly concluded, formed the customs tariff of our country. At the same time the export duties were entirely abolished.

In 1904 the urgent needs of the extraordinary fund in connection with the war with Russia led to the imposition of a special surtax on the customs duties as well as on the other taxes, and soon after the restoration of peace the entire customs tariff was revised and came into operation on October 1, 1906.

The Tariff Revision The Import Tariff Revision Bill passed the Imperial Diet in 1910 and was promulgated by Law No. 54 in April of the same year. The new tariff came into operation on July 17, 1911, but since then the tariff has been revised several times.

A new tariff convention was also concluded with Italy in June, 1913.

Tariff in Korea In conformity with the Imperial Declaration concerning the Annexation of Chosen in 1910, the tariff system of the former Korean Empire was left in force in the territory for ten years after the event. On expiration of the term of ten years on August 28, 1920, the tariff in force in Japan proper was applied to Chosen.

The Luxury Duties Under Law No. 24, promulgated on July 31, 1924, which regulates import duties on certain luxuries, a hundred per cent ad valorem import duty was imposed for the time being on about one hundred and twenty kinds of goods which were designated as luxuries.

A partial amendment of the import duties on luxuries was made on April 1, 1925, exempting articles imported for industrial use, materials for re-export and certain other materials from the 100% duties.

Kwantung L. T. With the object of

encouraging the industries in Kwantung Leased Territory and of promoting exports to the home country, portland cement and twenty-nine other articles produced in the province were exempted from import duties by the Act of June 18, 1925.

The Revision of 1926 Although several amendments in minor details had been made from time to time, the customs tariff of the country remained practically unchanged from 1910 to 1926 when the Government introduced into the Imperial Diet a Bill proposing a general amendment embodying the following principles:

(a) Raw materials which are not produced or are scarce in this country are to be free of duties.

(b) Necessary protection is to be given to staple industries that have bright prospects for the future.

(c) Import duties are to be left untouched or are to be reduced with respect to foreign articles with which home produce is able to compete.

(d) Duties on the necessaries of daily life are to be reduced.

(e) In order to discourage consumption, high duties are to be imposed upon articles other than necessaries of daily life.

(f) The number of specific duties are to be increased and more minute classification of articles is to be made for convenience in the imposition of duties.

The Bill was passed by both Houses of the Imperial Diet without amendment, excepting the proposal concerning wheat, flour and eggs, and was put into effect on March 29, 1926.

Although not the direct object of the amendment, an increase in the customs revenue was expected as a result of the change in the rates of duties and the adjustment of the relation between specific duties and ad valorem duties in accordance with the rise of commodity prices.

Amendments During 1927 (a) Change of duties on sugar, etc.

The duties on sugar were amended on April 1, 1927. The duties on starch, butter, oxidized cobalt, oleine and cassava-root were also altered at the same time.

(b) Revision of the preferential tariff for Kwantung Leased Territory.

An amendment was made as to the articles exempted from import duties under the preference given to Kwantung L. T. by adding soy-bean oil and certain kinds of manufactured cloths to the free list. This amendment was put into effect on April 1, 1927.

Amendments During 1929 (a) Tea and

twenty other luxury articles have been exempt from the luxury import duty since March 30, 1929.

(b) Import duties on wool and liquid gold were amended, and this amendment was put into effect on March 30, 1929.

(c) Cotton yarns and other goods manufactured in Kwantung L. T. have been exempt from import duties since May 1, 1929.

(d) Abolition of exceptions in import duties applicable in Chosen.

Although the import tariff of Chosen is generally the same as that of Japan proper, there existed certain exceptions in the case of import duties on horses and four other articles. The exceptions in the case of import duties on horses and two other articles were, however, abolished on and after March 30, 1929. The exceptions in the case of salt and wood were also amended, the former being abolished on and after April 1, 1930 and the latter on and after April 1, 1932.

Amendments During 1930 A. Millet, "Kao-liang" (*Andropogon vulgaris*), were exempted from import duties.

B. Of cotton yarns:

(a) Special cotton yarns were exempted from import duties.

(b) The rate of import duties on cotton yarns gray, single or two fold, with the exception of special cotton yarns, was reduced per 100 kin as follows:

Not exceeding No. 24 English
from ¥ 5.80 to ¥ 3.75

Not exceeding No. 42 English
from 6.40 to 4.15

Agricultural products and foodstuffs Wheat, millet (*Andropogon vulgaris*), Indian corn, wheat flour, butter, and condensed milk.

Industrial products Pig iron, wire, reed wires, barbed twisted wires, parts of watches, parts of automobiles, and internal combustion engines.

Forestry products Certain kinds of wood.

(2) In view of the decline in exchange rates, it was decided to increase, for the time being, the specific duties as provided in the Import Tariff annexed to the Customs Tariff Law to 135 per cent. This increased rate was put into effect on and after June 16, 1932, but is not applicable to the articles mentioned in (1) above.

Amendments During 1933 A. Ephedra herbs, argol, amorphophallus tubers, and bone ashes were newly provided for in the Import Tariff. These articles, except amorphophallus tubers, had been exempt from import duties. In the case of amorphophallus tubers, the import duty was imposed on those in meal at the rate of ¥16 per 100 kin and on

Not exceeding No. 60 English
from 9.50 to 6.15

Not exceeding No. 80 English
from 11.00 to 7.15

Others
from 11.30 to 7.35

C. The rate on cement was reduced to ¥0.15 or 50% per 100 kin.

D. Certain kinds of iron pipes and tubes were exempted from import duties.

The above amendments were effective from May 17, 1930.

Amendments During 1931 A. Of import duties on wood, those on Momi (*Abies*), Tauhi (*Picea*), Matsu (*Pinus*) and Karamatsu (*Larix*) were amended as follows:

(a) Formerly, the import duty on wood not exceeding 200 millimetres in thickness was ¥1.10 per cubic metre, but it was raised to ¥4.45 per cubic metre.

(b) An import duty was newly imposed at the rate of ¥2.70 per cubic metre on other woods (including logs and cants) which were formerly exempt from the duty.

B. Import duty on rayon was reduced from ¥125 to ¥75 per 100 kin.

The above amendments were effective from April 1, 1931.

Amendments During 1932 (1) An increase in import duties was effected as from June 16, 1932 in respect of 29 articles in the case of which circumstances either at home or in the countries of export demanded it. The principal articles, the rates on which were increased, were as follows:

others at the rate of ¥5.50 per 100 kin. B. The following amendments were made in import duties on wood on which no labour was expended after cutting, sawing or splitting:

(a) With respect to logs and cants of douglas fir, etc. under the head of conifers:

1. Those exceeding 18 metres in length and not exceeding 30 centimetres in diameter at the top end were exempted from import duties;

2. On those exceeding 10 metres in length and not exceeding 30 centimetres in diameter at the top end duty was imposed at the rate of ¥2 per cubic metre;

3. On others duty was imposed at the

rate of ¥2.5 per cubic metre.

(b) With respect to timber of broad-leaved trees, but not provided for in the Import Tariff.

1. On those not exceeding 200 millimetres in thickness duty was imposed at the rate of ¥5.5 per cubic metre.

2. On others, including logs and cants, duty was imposed at the rate of ¥2 per cubic metre.

These amendments were made by Law No. 26 of March, 1933, and put into effect as from March 29. It should, however, be noted that the provisions of Law No. 4 of 1932 are not applicable to the above articles on which specific duties are imposed.

Amendments from January to July, 1935 A. Luxuries and similar articles.

(a) The import duty on precious stones has been reduced from an ad valorem duty of 100 per cent to 10 per cent.

(b) With the abolition of an ad valorem duty of 100 per cent on "shochu" included in the item of alcoholic liquors, such "shochu" has been subject to the General Tariff.

B. Articles in general.

(a) On musk xylol under the heading of artificial musks the duty has been imposed at the rate of ¥125 per 100 kin, and on others an ad valorem duty of 35 per cent has been imposed.

(b) Of bleached plain tissues of flax pure or mixed with cotton, articles which had hitherto been exempt from import duties became subject to the same duties as those on tissues of flax and tissues of flax mixed with cotton.

(c) On magnesium alloys the same duty as that on magnesium has been imposed.

(d) Catalyzers containing vanadium have been exempted from import duties.

(e) On vulcanized fibres the duty has been imposed at the rate of ¥26 per 100 kin.

These amendments were put into effect as from April 4, 1935.

C. In answer to the customs measures taken by Canada against our merchandise, ad valorem duties of 50 per cent are, for one year from July 20, 1935, imposed, in addition to the import duties enumerated in the Import Tariff annexed to the Customs Tariff Law, on the following articles produced in Canada or articles manufactured in bonded manufacturing warehouses from Canadian raw materials:

Wheat, wheat flour, wheat starch, gluten, pulp for paper making (including that for rayon making), packing paper, match paper, endless felts for paper making, and wood under the heading of conifers.

Amendments during 1936 A. Law concerning Adjustment of Trade and Safe-guarding of Commerce (Law No. 45 of 1934).

(a) It was provided that this Law should remain in force until April 30, 1937, but this period has been prolonged till April 30, 1940 by Law No. 1 of 1936.

(b) The Canadian Government, complying with Japan's demands, decided to withdraw the customs measures hitherto taken in regard to Japanese merchandise, and consequently, the Japanese Government abolished, as from January 1, 1936, ad valorem duties of 50 per cent imposed since July 20, 1935 on certain categories of Canadian commodities.

(c) In the course of the negotiations between Japan and Australia, the Australian Government, aiming mainly at Japanese merchandise, has suddenly taken the step of raising customs tariffs or adopting the import licence system. In retaliation for the measures, the Japanese Government was obliged to introduce, as from June 25, 1936, the import licence system for Australian wheat, wool and other commodities by Imperial Ordinance No. 124 of 1936 issued in accordance with Article 1 of the Law concerning Adjustment of Trade and Safeguarding of Commerce, and imposed, in addition to the import duties enumerated in the Import Tariff annexed to the Customs Tariff Law, ad valorem duties of 50 per cent on the following commodities produced in Australia or manufactured from Australian raw materials:

Beef, butter, condensed milk, leather, beef tallow, and casein.

B. The following amendments have been made in the import duties enumerated in the Import Tariff annexed to the Customs Tariff Law:

(a) The duty has been imposed on citronella oil at the rate of ¥41 per 100 kin, and on lemongrass oil at the rate of ¥72 per 100 kin.

(b) On crude oil (including topping) and heavy oil the following duties have been imposed according to the percentage by volume of distillates up to 275° C. by the fractional distillation:

1. Not exceeding 20%	¥ 6.05 per kilolitre
2. Not exceeding 25%	7.40
3. Not exceeding 30%	8.80
4. Not exceeding 35%	10.25
5. Not exceeding 40%	11.75
6. Others	13.25

Note: Those containing more than 45% are subject to an additional duty at the rate of 30 sen per 1 kilolitre for every additional 1%.

(c) On mineral oils (including lubricating oils which contain animal and vegetable oils or fats, soap, etc.) other

than those mentioned in (b) above, the following duties have been imposed according to specific gravity at 15° C.:

1. Not exceeding 0.8017	¥33.0 per kilolitre
2. Not exceeding 0.8498	28.5
3. Other	
a. Having melting point up to 15°C.	43.0
b. Other	4.6 .. 100 kg.

(d) No duty has been imposed on paraffin wax in crude form, separated from shale oil. On paraffin wax having a melting point up to 45° C. the duty has been imposed at the rate of ¥6 per 100 kin, and on others at the rate of ¥12 per 100 kin.

(e) Acetyl-salicylic acid has been displaced by aspirin on which the duty has been imposed at the rate of ¥112 per 100 kin.

(f) The duty has been imposed on antipyrine at the rate of ¥258 per 100 kin.

(g) Pyramidon has been displaced by

1. Cold rolled	25% ad valorem
2. Other	
a. Not exceeding 50 mm. in width	¥1.7 per 100 kin
b. Other	1.5

(1) On ingots, slabs and grains of aluminium and aluminium alloys, the duty has been imposed at the rate of ¥17.7 per 100 kin; on bars or rods or plates and sheets at the rate of ¥38.3 per 100 kin; on wires and tubes 25% ad valorem; on foils (including inner packings) at the rate of ¥55.8 per 100 kin; and on waste or old, fit only for remanufacturing, at the rate of ¥17.7 per 100 kin.

These amendments were made by Law No. 38 of 1936, and were effective as from June 1 of the same year.

C. Amendments have been made in the Law relating to Specific Duties in Import Tariff (Law No. 4 of 1932) to include in the list annexed to the Law mineral oils and nine other articles the duties on which were revised by Law No. 38 of 1936 (Law No. 39 of 1936).

D. Amendments have been made in the Law relating to Import Duties on Lux-

ureries and Similar Articles (Law No. 24 of 1924) to eliminate from the list annexed to the Law citronella oil, lemongrass oil and ionone the duties on which were revised by Law No. 38 of 1936 (Law No. 40 of 1936).

(h) The duty has been imposed on carbonate of guaiacol at the rate of ¥316 per 100 kin.

(i) The duty has been imposed on ionone at the rate of ¥3.5 per kin.

(j) The ad valorem duty of 10% has been imposed on iron bands, cold rolled, containing not less than 0.75% by weight of carbon.

(k) On iron bands other than those mentioned in (j) above, the following duties have been imposed:

1. Cold rolled	25% ad valorem
2. Other	
a. Not exceeding 50 mm. in width	¥1.7 per 100 kin
b. Other	1.5

ureries and Similar Articles (Law No. 24 of 1924) to eliminate from the list annexed to the Law citronella oil, lemongrass oil and ionone the duties on which were revised by Law No. 38 of 1936 (Law No. 40 of 1936).

E. By Imperial Ordinance No. 237 of 1936 issued in accordance with Article 3 of the Customs Tariff Law, the conventional rates have been applicable to the articles produced in Syria and Lebanon, French mandated territories, except in cases where the rates as provided for in the Import Tariff annexed to the Customs Tariff Law are lower than the conventional rates.

Amendments during 1937 A. Abolition of additional duties on Australian commodities imposed under the Law concerning Adjustment of Trade and Safeguarding of Commerce.

In consequence of the Trade Arrangement concluded between the Japanese

and Australian Governments, ad valorem duties of 50% imposed, from June 25, 1936 onward, on certain categories of Australian commodities were abolished as from January 1, 1937.

B. Imperial Ordinance No. 130 of 1937 concerning the Exemption of Import Duty on Iron was put into operation as from April 15, 1937. It should, however, be noted that said Ordinance was abrogated by Law No. 57 of 1937 having nearly the same contents as the aforesaid Ordinance. The provisions of Law No. 57 are summarised as follows:

(a) Iron shall be exempted from the import duty up to June 30, 1939.

(b) In cases where the Government deems it necessary, the period mentioned above may be shortened by specifying articles by means of Imperial Ordinance.

C. The preferential tariffs for Kwantung Province have been amended by Law No. 58 of 1937 as follows:

(a) Hardened oil, made in Kwantung Province of soya bean oil produced in the province, has been exempted from the import duty.

(b) Ammonium nitrate produced in

(1) Exceeding 0.934	¥ 6.75 per kilolitre
(2) Exceeding 0.904	10.30 " "
(3) Exceeding 0.860	18.00 " "
(4) Other	23.40 " "

Note: Those containing more than 40% by volume of distillates to 215°C. by distillation are subject to an additional duty at the rate of 30 sen per kilolitre for every additional 1%.

2. Other (including those containing alcohol, etc.):
animal and vegetable oils or fats, soap,

(1) Not exceeding 0.8017	¥46.20 per kilolitre
(2) Not exceeding 0.8498	41.00 " "
(3) Other:	
Having melting point up to 15°C.	71.20 " "
Other	8.30 " 100 kg.

(c) Coal gas has been included in the Import Tariff and exempted from the import duty.

(f) "Pulp for paper making" included in Group XI of the Import Tariff has been changed to "Cellulose pulp."

(g) Of the printing paper other than art paper, paper weighing not more than 58 grammes per square metre (excluding that coloured in the paste) has

1. Chassis:	
(1) Not exceeding 250 centimetres in wheel base	¥154.15 per 100 kin
(2) Other	44.42 " " "
2. Frames, wheels, front springs and rear springs	14.17 " " "
3. Engine hoods, fuel-tanks, running boards (including those with aprons) and bumpers	24.61 " " "

Kwantung Province has been exempted from the import duty.

D. The following amendments have been made by Law No. 55 of 1937 in the Customs Tariff Law and the import tariff annexed to the Law:

(a) Mineral oils for fuel imported by the Government have been exempted from the import duty.

(b) Articles of Government monopoly or materials to be used for the manufacture of alcohol imported by the Government, and aircraft, or motors or propellers for aircraft imported with Government permission in accordance with the provisions of Ordinance have been exempted from the import duty.

(c) Import duties on materials to be used for the manufacture of cellulose pulp may be exempted or refunded in whole or in part in accordance with the provisions of Ordinance.

(d) Mineral oils manufactured from coal or oil shale have been exempted from the import duty. On other mineral oils the following duties have been imposed according to the specific gravity at 15°C.:

1. Crude oil and heavy oil:

(1) Exceeding 0.934	¥ 6.75 per kilolitre
(2) Exceeding 0.904	10.30 " "
(3) Exceeding 0.860	18.00 " "
(4) Other	23.40 " "

been exempt from the import duty.

(h) Bearing balls given in Group XV of the Import Tariff have been eliminated.

(i) Ad valorem duties on automobiles have been increased to 70%.

(j) On parts of automobiles (excluding motive machinery) the following duties have been imposed.

4. Front axles (including those with wheel hubs), mufflers, and rims for tyres	¥30.26 per 100 kin
5. Rear axles (including those with wheel hubs), press worked steel panels for bodies, front doors and rear doors	41.30 " " "
6. Transmissions, steering wheels, steering gears, and instrument panels (excluding those with instruments)	63.99 " " "
7. Universal joints and shock absorbers	86.08 " " "
8. Differential gears and pinions	92.92 " " "
9. Transmission gears	138.30 " " "
10. Other	60% ad valorem duty

(k) On internal combustion engines for automobiles duties have been imposed at the rate of ¥48 per 100 kin, and on those for cycles a 35% ad valorem duty has been imposed.

(l) Of parts of machinery (not otherwise provided for), on card clothing combined with leather the duty has been imposed at the rate of ¥120 per 100 kin, and on others at the rate of ¥60.0 per 100 kin. On bearings ad valorem duty of 30% has been imposed; on bearing balls at the rate of ¥37 per 100 kin, and on others ad valorem duty of 30%.

(m) On cassava-root the duty has been imposed at the rate of ¥1.65 per 100 kin.

(n) Ad valorem duties of 5% have been imposed on denatured molasses.

Of the above amendments, those coming under B, C, and D were effected as from August 11, 1937.

E. Amendment of the Law relating to Specific Duties in Import Tariff (Law No. 4 of 1932).

(a) By Law No. 56 of 1937, the following articles have been provided for in the list annexed to Law No. 4 of 1932, and have been exempted from the application of the specific duties of 135%:

Sugar (excluding sugar under No. 11 Dutch standard), rock candy sugar, cube sugar, loaf sugar, and similar sugar, caustic soda (excluding the refined), cotton yarns (excluding special cotton yarns, otherwise provided for), woollen yarns, mixed yarns of cotton and wool, artificial silk (excluding that made from acetyl-cellulose), cellulose pulp, packing paper and match paper (excluding tissue paper), copper (excluding twisted wires and pipes and tubes coated with base metals), lead (ingots, slabs and tubes), tin (ingots, slabs, and foils), zinc (excluding wires, tubes, plates and sheets nicked, and other plates and sheets not exceeding 0.17 millimetres in thickness), brass and bronze, parts of automobiles (excluding motive machin-

ery), internal combustion engines for automobiles, and card clothing, reeds of metal and bearing balls of parts of machinery (not otherwise provided for).

(b) The following amendments have been made in the list annexed to Law No. 4 of 1932:

1. Of mineral oils:

Those manufactured from coal or oil shale have been eliminated from the list.

2. Of printing paper other than art paper:

(1) Paper weighing not more than 58 grammes per square metre has been eliminated from the list.

(2) Paper (excluding that coloured in the paste and that weighing not more than 58 grammes per square metre) has newly been provided for in the list.

These amendments were effected as from August 11, 1937, except those for sugar and fourteen other articles which were put into operation as from October 1 of the same year.

Amendments during 1938 A. The following amendments have been made in the Customs Tariff Law and the Import Tariff annexed to the Law by Law No. 63 of 1938:

(a) Hatter's fur has newly been provided for in Article 9, clause 1 of the Customs Tariff Law, and import duties on materials to be used for the manufacture of this article may be exempted or refunded in whole or in part.

(b) The ad valorem duty of 50% has been imposed on cash-registers, calculating machines, and the like, and parts thereof.

(c) Import duties on wood have been amended as follows:

Of Abies (todomatsu, etc.), Picea (ezomatsu, spruce, etc.), Pinus (benimatsu, etc.) and Larix (karamatsu, etc.):

(1) Pinus (benimatsu, etc.) has been exempted from the import duty.

(2) Others: -

On those not exceeding 200 millimetres in thickness the duty has been imposed at the rate of ¥6 per cubic

metre, and on others, including logs and cants, at the rate of ¥3.64 per cubic metre.

B. The following amendments have been made in Imperial Ordinance No. 238 of 1921 by Imperial Ordinance No. 201 of 1938:

(a) As *Abies* (*benimatsu*, etc.) has been exempted from the import duty

in the Import Tariff annexed to the Customs Tariff Law, it has been eliminated from the articles mentioned in Imperial Ordinance No. 238 of 1921.

(b) Rabbit and hare furs, materials for hatter's furs, have been exempted from the ad valorem duty of 40%.

The above amendments were effected as from April 1, 1938.

CHAPTER XII

INSURANCE

General Survey

Marine Insurance Comes First In Japan, as in most maritime countries, marine insurance preceded life insurance, but the margin of time separating the two was much narrower in Japan, for there was a difference of two years only. Following the Restoration in 1868, the feudal lords or daimyo were dispossessed of their domains, but the Meiji Government undertook to compensate them for the lands confiscated. The condition of Government finance, however, did not permit of the payment of large sums of cash to the daimyo and pension bonds were issued to them instead. Hachisuka, Ikeda, Daté and other powerful and rich lords searched for an outlet for their energies and surplus funds and, deciding on insurance, advanced a plan to form a marine and fire insurance business after the British system. A company was incorporated in Tokyo in January 1879, with Eiichi Shibusawa as the person most intimately concerned with the consummation of the plan, and Yataro Iwasaki, the founder of the Mitsubishi interest, as his able lieutenant. The initial capital was ¥650,000. Marquis Hachisuka was president and Shibusawa and Iwasaki advisers.

Life Insurance Follows The late Tai-zo Abé was the originator of life insurance in Japan. Two years after the introduction of marine insurance he founded the Meiji Life Insurance

Company in September, 1881, with a capital of ¥150,000. The promoters of this company were mostly graduates of the Keio Gijuku (present Keio University). In 1888 the Teikoku Life Insurance Company was founded, and the Nippon Life Insurance Company was incorporated in Osaka in the following year. Zenjiro Yasuda was the founder of the Meiji Fire Insurance Company, the first of the kind in Japan.

The Present Status The home insurance business at present consists of 13 kinds, namely, life, life annuities, military conscription, accident, marine, fire including forest fire, transportation, automobile, burglary, glass, fidelity, engine and boiler and air insurance. Conscription insurance is interesting as it cannot be considered as pure insurance. The idea is to provide relief to the parents of young men who are called up to serve their time in the army. The insurance is taken out at any time from birth to 15 years of age, then, when the boy is conscripted at 20 years of age, the sum contracted for is paid to his parents. In case the boy is not called upon to serve his time in the army the premium only is repaid, and the assured persons who are enrolled in the army and participate in the forfeited and accrued interest of those not called up together, with that of those who have died before being conscripted. It is 40 years since the business was first commenced and four companies engage in it.

INSURANCE COMPANIES

(Compiled by the Ministry of Commerce and Industry)

Business Year	Number of Concerns	Paid-up Capital and Funds (In ¥1,000 and 1,000 contracts)	Liability Reserves at End of Year	Contracts in Force at End of Year	
				No.	Amount
1922-23	95	118,043	591,350	11,121	13,699,379
1923-24	96	119,043	670,003	11,467	13,971,965
1924-25	95	119,043	780,115	13,633	16,704,023
1925-26	95	122,018	890,457	15,876	19,269,426
1926-27	95	124,062	1,016,929	16,029	20,651,623
1927-28	93	123,757	1,130,869	17,517	22,268,970
1928-29	94	123,585	1,253,062	19,086	23,752,130
1929-30	93	124,335	1,408,520	22,199	25,949,943
1930-31	92	123,229	1,519,352	23,097	27,490,657

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1929-30	93	124,335	1,408,520	22,199	25,949,943
1930-31	92	123,229	1,519,352	23,097	27,490,657

INSURANCE

Business Year	Number of Concerns	Paid-up Capital and Funds	Liability Reser-	Contracts in Force	
			ves at End of Year	No.	Amount
1931-32	91	122,170	1,637,178	22,693	27,469,633
1932-33	89	122,570	1,831,610	23,123	29,427,346
1933-34	84	150,925	1,985,929	25,443	33,108,786
1934-35	84	151,275	2,350,077	26,480	34,902,161
1935-36	83	150,273	2,442,402	28,599	37,480,869
1936-37	81	149,335	2,788,621	30,882	39,877,588
1937-38	81	149,735	3,093,085	31,917	43,170,731

INSURANCE COMPANIES BY KINDS

1933-1938

(Amount in yen)

Kind of Insurance	Business Year	Number of Companies	Capital or Fund		Reserve Found		
			Authorized	Paid-up	Liability and Current	Others	
Accident	1933-34				945,927	57,815,170	
	1934-35				1,045,697	61,589,100	
	1935-36				1,167,232	65,156,500	
	1936-37				1,289,332	71,707,000	
	1937-38				1,397,569	83,300,100	
Fire	1933-34				114,713,943	71,726,746	
	1934-35				116,393,087	76,173,940	
	1935-36				121,867,964	80,393,011	
	1936-37				130,542,194	87,911,669	
	1937-38				139,004,327	95,814,154	
Marine	1933-34				76,628,071	67,553,842	
	1934-35				80,132,896	72,028,475	
	1935-36				82,256,323	75,960,050	
	1936-37				87,131,618	82,933,553	
	1937-38				95,933,136	90,448,180	
Transportation	1933-34				2,043,729	66,808,842	
	1934-35				2,176,179	71,174,239	
	1935-36				2,207,836	75,006,785	
	1936-37				2,403,721	82,177,828	
	1937-38				2,707,573	89,365,455	
Fidelity	1933-34				95,000	18,118,800	
	1934-35	1933-34	51	329,900,000	128,088,645	93,000	18,514,800
	1935-36				94,000	23,568,500	
	1936-37				112,400	25,159,000	
	1937-38				137,800	26,431,100	
Engine and Boiler	1933-34	1934-35	51	329,900,000	128,762,500	39,031	60,560
	1934-35				44,096	63,560	
	1935-36				52,363	66,585	
	1936-37				65,662	68,655	
	1937-38				71,960	72,055	
Automobile	1933-34	1935-36	49	323,500,000	126,110,000	2,274,918	49,950,200
	1934-35				2,530,498	53,494,800	
	1935-36	1936-37	48	323,000,000	126,772,500	3,002,076	57,226,800
	1936-37				3,195,539	60,919,500	
	1937-38				3,434,369	72,220,900	
Burglary	1933-34	1937-38	48	323,000,000	126,772,500	249,745	44,050,000
	1934-35				242,784	42,291,000	
	1935-36				259,932	44,906,000	
	1936-37				265,598	48,691,000	
	1937-38				261,799	58,542,000	
Glass	1933-34				58,199	32,600,000	
	1934-35				62,398	34,385,000	
	1935-36				57,091	36,590,000	
	1936-37				72,185	39,560,000	
	1937-38				72,805	43,160,000	
Air	1937-38				106,500	28,786,000	

COMPANIES

Kind of Insurance	Business Year	Number of Companies	Capital or Fund		Reserve Found		
			Authorized	Paid-up	Liability and Current	Others	
Life	1933-34	1933-34	34	42,650,000	23,437,000	1,609,662,549	147,526,178
	1934-35	1934-35	33	45,800,000	22,512,500	1,798,822,750	146,785,642
	1935-36	1935-36	33	45,750,000	22,462,500	2,004,828,537	169,450,016
	1936-37	1936-37	34	45,700,000	22,412,500	2,255,641,110	192,540,062
	1937-38	1937-38	33	46,050,000	22,962,500	2,480,308,044	218,246,750
Conscription	1933-34					179,217,142	4,722,361
	1934-35					201,530,031	6,126,596
	1935-36					226,582,775	7,748,113
	1936-37					307,867,211	9,374,577
	1937-38					369,609,679	11,781,641
Life Annuity	1933-34					1,628	—
	1934-35					14,551	—
	1935-36					25,511	—
	1936-37					34,194	—
	1937-38					39,157	—

Conditions of Business Earnings

Kind of Insurance	Business Year	Premiums	Interest	Others	Total
Accident	1933-34	952,702	—	111,581	1,064,283
	1934-35	855,882	—	49,505	905,167
	1935-36	1,043,317	—	76,915	1,120,232
	1936-37	1,038,688	—	51,050	1,089,738
	1937-38	1,041,747	—	90,040	1,131,787
Fire	1933-34	94,082,693	8,053,153	21,222,340	123,358,186
	1934-35	96,531,623	7,967,747	21,669,574	126,168,944
	1935-36	100,063,769	8,036,951	22,484,902	130,585,622
	1936-37	101,790,013	8,288,298	22,747,727	132,826,038
	1937-38	108,963,127	8,776,802	24,226,522	141,966,451
Marine	1933-34	31,101,512	13,786,286	8,257,452	53,145,250
	1934-35	33,155,472	15,100,000	9,193,843	57,449,315
	1935-36	34,768,345	16,186,182	7,484,636	58,439,163
	1936-37	36,865,247	17,048,146	7,099,840	61,013,233
	1937-38	45,628,323	17,961,332	6,292,636	69,882,291
Transportation	1933-34	1,021,082	—	25,243	1,046,325
	1934-35	1,170,622	—	41,704	1,212,326
	1935-36	1,303,614	—	41,368	1,344,982
	1936-37	1,412,688	484	24,791	1,437,963
	1937-38	1,561,817	527	37,505	1,599,849
Fidelity	1933-34	83,719	—	6,112	89,831
	1934-35	86,218	—	4,592	90,810
	1935-36	99,712	—	4,162	103,874
	1936-37	106,875	—	5,778	112,653
	1937-38	119,186	—	6,175	125,361
Engine and Boiler	1933-34	80,542	11,385	9,848	101,775
	1934-35	88,116	10,107	10,680	108,903
	1935-36	99,458	10,952	8,480	118,890
	1936-37	114,608	13,506	42,654	170,768
	1937-38	125,768	11,865	14,039	151,672
Automobile	1933-34	1,749,665	5,778	41,344	1,796,787
	1934-35	1,984,624	5,791	24,221	2,014,636
	1935-36	2,675,503	60	35,198	2,710,761
	1936-37	3,030,928	—	35,416	3,066,344
	1937-38	3,446,369	—	38,084	3,484,453
Burglary	1933-34	59,158	—	1,332	60,490
	1934-35	60,119	—	3,031	63,150
	1935-36	73,219	—	1,303	74,522
	1936-37	65,215	—	2,149	67,364
	1937-38	46,088	—	2,412	48,500
Glass	1933-34	7,680	—	460	8,140
	1934-35	11,825	—	877	12,702
	1935-36	12,925	—	1,371	14,296
	1936-37	11,295	—	1,480	12,775
	1937-38	15,906	—	2,058	17,964
Air	1937-38	10,250	—	58	10,308

INSURANCE

Kind of Insurance	Business Year	Premiums	Interest	Others	Total
Life	1933-34	350,372,780	99,973,149	26,522,160	476,868,089
	1934-35	419,803,582	101,842,188	31,067,876	553,713,646
	1935-36	449,716,033	110,642,695	27,523,541	587,864,269
	1936-37	519,508,056	120,886,258	40,677,759	681,072,073
	1937-38	594,410,101	136,185,764	39,875,260	770,471,125
Conscription	1933-34	25,939,982	11,057,417	5,254,869	42,252,268
	1934-35	30,471,839	12,283,255	8,145,974	50,851,068
	1935-36	34,503,310	14,379,890	7,205,263	56,088,463
	1936-37	41,712,449	15,772,258	6,229,088	63,713,795
	1937-38	49,779,269	18,399,985	6,831,729	75,010,983
Life Annuity	1933-34	2,000	—	—	2,000
	1934-35	14,140	—	—	14,140
	1935-36	13,626	—	—	13,626
	1936-37	12,646	—	—	12,646
	1937-38	9,173	—	—	9,173

Conditions of Business

Kind of Insurance	Business Year	Expenses				Total
		Claims Paid	Payment by Contract Other than Claims	Business Expenses	Others	
Accident	1933-34	538,176	11,392	381,344	14,823	945,735
	1934-35	547,659	80,880	337,063	64,459	1,030,061
	1935-36	613,722	28,527	391,090	29,474	1,062,813
	1936-37	596,722	76,218	370,327	22,784	1,066,051
	1937-38	566,156	53,599	371,145	37,921	1,028,821
Fire	1933-34	34,704,434	12,259,579	55,594,541	6,660,150	109,218,704
	1934-35	41,534,912	11,834,873	57,592,514	5,862,325	116,824,624
	1935-36	32,184,327	13,709,218	61,210,976	5,999,436	113,103,957
	1936-37	30,073,003	14,276,932	63,721,188	6,334,542	114,405,665
	1937-38	25,944,771	15,592,563	69,082,276	7,426,040	118,045,590
Marine	1933-34	19,602,005	2,317,516	6,823,090	7,605,849	36,348,460
	1934-35	24,243,554	2,360,659	7,497,025	5,596,146	39,697,384
	1935-36	23,137,480	2,676,831	8,497,886	5,841,181	40,153,378
	1936-37	20,402,964	2,538,977	8,852,945	7,031,607	38,826,493
	1937-38	21,576,081	3,785,595	10,241,525	11,074,666	46,677,867
Transportation	1933-34	100,487	99,038	215,810	7,894	423,229
	1934-35	336,789	118,777	241,623	8,572	705,761
	1935-36	254,156	121,637	279,620	4,958	660,371
	1936-37	180,859	142,133	303,106	31,830	657,928
	1937-38	254,329	165,385	331,166	8,893	760,773
Fidelity	1933-34	26,820	2,078	26,111	105	55,114
	1934-35	21,600	976	26,256	128	48,960
	1935-36	28,382	1,100	29,601	173	59,256
	1936-37	25,091	4,837	34,583	194	64,705
	1937-38	15,062	8,053	38,750	577	62,442
Engine and Boiler	1933-34	—	684	78,199	7,162	86,025
	1934-35	—	390	80,905	5,720	87,015
	1935-36	—	735	84,428	7,446	92,609
	1936-37	525	530	90,057	42,960	134,072
	1937-38	1,550	1,174	100,193	18,112	121,029
Automobile	1933-34	866,525	275,363	540,735	74,302	1,756,925
	1934-35	877,095	293,041	554,454	20,751	1,745,341
	1935-36	983,425	393,349	781,127	59,058	2,216,959
	1936-37	1,076,888	473,007	876,753	50,505	2,477,153
	1937-38	1,376,661	551,583	1,007,451	13,394	2,949,089
Burglary	1933-34	22,836	1,339	22,151	511	46,837
	1934-35	18,176	1,299	24,185	169	43,829
	1935-36	29,814	2,737	28,952	1,685	63,138
	1936-37	17,988	4,721	23,579	3,332	49,620
	1937-38	14,007	11,938	14,862	593	41,400
Glass	1933-34	5,339	559	1,826	13	7,737
	1934-35	5,139	561	2,929	15	8,644
	1935-36	5,111	929	4,076	40	10,156
	1936-37	6,430	493	3,441	39	10,403
	1937-38	6,217	1,611	4,584	22	12,434
Air	1937-38	21,901	31	1,109	2	23,243

BUSINESS CONDITIONS

Kind of Insurance	Business Year	Payment by			Others	Total
		Claims Paid	Contract than Claims	Business Expenses		
Life	1933-34	124,659,486	78,516,055	83,935,600	22,959,150	310,070,291
	1934-35	139,890,791	91,552,425	96,970,690	27,910,235	356,324,141
	1935-36	143,817,994	68,480,705	102,427,574	30,667,198	345,393,471
	1936-37	167,531,843	71,344,489	108,933,815	38,718,528	386,528,675
	1937-38	192,705,499	75,855,960	122,001,416	40,212,825	430,775,700
Conscription	1933-34	1,681,245	5,831,146	11,618,262	2,753,896	21,884,549
	1934-35	2,283,129	6,684,205	13,547,886	5,028,983	27,544,203
	1935-36	2,802,208	7,024,635	13,409,799	6,985,070	50,221,712
	1936-37	4,058,583	7,826,972	15,945,841	4,515,734	32,347,130
	1937-38	4,262,315	7,700,177	17,713,749	6,426,046	36,102,287
Life Annuity	1933-34	432	—	—	—	432
	1934-35	1,432	28	—	—	1,460
	1935-36	3,480	—	—	—	3,480
	1936-37	4,476	—	—	—	4,476
	1937-38	6,391	—	—	—	6,391

Conditions of Business

Kind of Insurance	Business Year	New Contracts		Contracts in Force at the End of Business Year	
		Number	Amount	Number	Amount
Accident	1933-34	224,595	199,925,000	206,709	172,879,000
	1934-35	186,198	204,813,000	174,057	160,728,000
	1935-36	178,675	243,433,000	162,173	182,989,000
	1936-37	165,477	263,794,000	134,696	179,284,000
	1937-38	141,686	276,290,000	119,073	194,971,000
Fire	1933-34	20,377,560	27,593,329,000	16,943,563	21,119,623,000
	1934-35	20,856,048	28,678,717,000	17,064,927	21,321,758,000
	1935-36	21,314,830	29,742,490,000	18,023,182	22,223,679,000
	1936-37	21,301,471	30,041,467,000	18,305,746	22,286,504,000
	1937-38	21,378,750	31,860,709,000	18,042,103	22,790,755,000
Marine	1933-34	5,140,252	7,874,981,000	884,104	1,796,231,000
	1934-35	5,983,524	9,676,112,000	975,081	2,056,947,000
	1935-36	6,470,590	10,543,046,000	1,088,088	2,079,711,000
	1936-37	6,838,623	10,906,507,000	1,270,885	2,387,322,000
	1937-38	6,793,531	13,326,855,000	1,284,529	2,865,262,000
Transportation	1933-34	1,744,067	5,521,416,000	82,913	334,900,000
	1934-35	1,921,886	6,067,066,000	96,020	295,399,000
	1935-36	2,068,014	6,688,453,000	99,010	347,746,000
	1936-37	2,228,642	7,506,516,000	119,224	438,599,000
	1937-38	2,484,973	7,774,507,000	116,442	476,016,000
Fidelity	1933-34	3,407	5,976,000	3,179	5,097,000
	1934-35	4,123	6,734,000	3,883	6,124,000
	1935-36	4,416	7,385,000	4,285	7,126,000
	1936-37	4,323	8,545,000	4,125	7,855,000
	1937-38	4,671	9,404,000	4,371	8,478,000
Engine and Boiler	1933-34	1,251	4,236,000	1,233	4,182,000
	1934-35	1,302	4,455,000	1,288	4,313,000
	1935-36	1,534	4,770,000	1,502	4,713,000
	1936-37	1,848	5,643,000	1,786	5,353,000
	1937-38	2,091	6,135,000	2,060	6,064,000
Automobile	1933-34	87,525	70,868,000	59,481	53,186,000
	1934-35	100,792	95,712,000	60,474	63,088,000
	1935-36	271,115	128,996,000	184,896	85,428,000
	1936-37	164,382	142,758,000	120,243	98,440,000
	1937-38	179,741	153,713,000	138,996	110,464,000
Burglary	1933-34	4,230	11,461,000	3,546	9,314,000
	1934-35	4,596	12,100,000	3,829	9,537,000
	1935-36	5,588	15,793,000	4,852	13,518,000
	1936-37	7,421	22,580,000	6,412	19,262,000
	1937-38	3,546	9,572,000	2,761	6,348,000
Glass	1933-34	345	129,000	326	120,000
	1934-35	397	199,000	391	192,000
	1935-36	471	236,000	443	219,000
	1936-37	509	225,000	472	213,000
	1937-38	546	750,000	501	280,000
Air	1937-38	25	328,000	15	253,000

Kind of Insurance	Business Year	Number		Amount	
Life	1933-34	1,056,220	1,756,493,000	6,029,271	8,806,589,000
	1934-35	1,286,437	2,144,302,000	6,702,346	10,049,122,000
	1935-36	1,429,087	2,443,231,000	7,486,937	11,495,614,000
	1936-37	1,627,357	2,800,491,000	9,170,139	13,247,858,000
	1937-38	1,802,630	3,169,452,000	10,232,485	15,309,734,000
Conscription	1933-34	268,296	223,925,000	1,229,857	806,593,000
	1934-35	317,963	249,392,000	1,398,454	934,593,000
	1935-36	311,961	233,551,000	1,544,160	1,040,126,000
	1936-37	346,947	262,159,000	1,749,053	1,207,198,000
	1937-38	381,495	300,690,000	1,974,551	1,397,038,000
Life Annuity	1933-34	1	432	1	432
	1934-35	4	1,663	5	2,095
	1935-36	5	1,385	10	3,480
	1936-37	2	1,661	12	5,141
	1937-38	4	811	14	5,068

Note: Business year covers the period from April 1 to March 31 of the following year. Most companies have several kinds of insurance and accordingly capital is not given here separately.

FOREIGN INSURANCE COMPANIES IN JAPAN (Compiled by the Ministry of Commerce and Industry)

(Amount in yen)

LIFE INSURANCE

Business Year	Number of Companies	Deposits with the Govt.	Pre-miums Received	Claims Paid	Business Conditions New Contracts		Contracts in Force at the End of Business Year	
					No.	Amount	No.	Amount
1932-33	3	31,708,560	12,256,409	6,065,434	3,528	17,698,000	38,957	220,780,000
1933-34	3	30,750,399	10,629,538	4,994,645	2,177	11,260,000	34,822	189,614,000
1934-35	3	30,013,250	9,367,042	4,863,891	1,919	8,960,000	31,253	162,849,000
1935-36	3	29,775,751	8,174,748	3,934,567	1,407	7,594,000	28,371	145,743,000
1936-37	3	27,832,074	7,430,965	5,590,660	1,189	5,882,000	25,840	129,688,000
1937-38	3	—	—	—	—	—	—	—

FIRE INSURANCE

Business Conditions
New Contracts Contracts in Force at the End of Business Year

Business Year	Number of Companies	Deposits with the Govt.	Pre-miums Received	Claims Paid	New Contracts		Contracts in Force at the End of Business Year	
					No.	Amount	No.	Amount
1932-33	26	5,126,901	4,438,087	2,519,249	201,824	1,473,093,000	143,650	918,122,000
1933-34	26	4,978,522	5,164,637	1,944,304	291,280	1,648,619,000	197,786	1,009,489,000
1934-35	26	5,240,905	6,167,260	6,879,393	363,519	2,010,920,000	237,731	1,271,407,000
1935-36	25	6,152,652	7,193,832	3,330,935	499,065	2,251,013,000	325,706	1,434,902,000
1936-37	25	6,317,095	7,081,046	4,104,787	557,341	2,404,350,000	305,216	1,307,478,000
1937-38	26	6,537,485	7,449,305	2,869,413	546,817	2,541,963,000	310,035	1,372,823,000

MARINE INSURANCE

Business Conditions
New Contracts Contracts in Force at the End of Business Year

Business Year	Number of Companies	Deposits with the Govt.	Pre-miums Received	Claims Paid	New Contracts		Contracts in Force at the End of Business Year	
					No.	Amount	No.	Amount
1932-33	16	3,757,780	1,052,831	575,059	107,901	316,005,000	16,452	46,737,000
1933-34	16	3,740,557	1,474,722	807,466	137,684	386,125,000	20,883	76,146,000
1934-35	16	4,002,939	1,833,343	2,155,218	155,613	467,512,000	22,549	92,191,000
1935-36	17	4,673,264	1,886,593	1,206,433	155,151	463,060,000	17,105	90,711,000
1936-37	17	4,796,107	1,761,142	1,028,326	169,316	445,115,000	22,346	61,183,000
1937-38	17	4,917,405	2,341,266	1,178,579	180,616	570,128,000	15,610	51,038,000

AUTOMOBILE INSURANCE

Business Year	Number of Companies	Deposits with the Govt.	Pre-miums Received	Claims Paid	Business Conditions			
					New Contracts		Contracts in Force at the End of Business Year	
					No.	Amount	No.	Amount
1934-35	3	701,638	63,905	19,782	644	24,438,000	571	19,926,000
1935-36	3	877,952	80,502	29,844	753	27,488,000	580	21,461,000
1936-37	3	997,628	76,125	18,443	719	25,399,000	572	19,206,000
1937-38	3	1,333,508	74,975	21,372	646	23,724,000	561	18,996,000

INVESTMENTS OF HOME INSURANCE COMPANIES

(The Insurance Year Book by the Ministry of Commerce and Industry)

(Amount in ¥1,000)

Advances

Year	Number of Companies	Mortgages on Real Estate	Mortgages on Factories, etc.	Mortgages on Vessels	Loans on Securities	Loans on Companies' Policies	Loans to Public Bodies	Other	Total
1933-34	84	78,344	87,287	11,354	118,216	230,438	58,305	7,003	590,950
1934-35	84	77,377	76,675	10,900	105,885	242,695	54,676	4,180	572,386
1935-36	82	70,819	83,037	10,152	112,583	257,602	109,071	7,338	650,602
1936-37	81	66,838	84,331	11,092	109,876	280,644	131,262	4,667	688,710
1937-38	81	69,714	83,703	14,641	155,124	307,969	156,621	4,008	791,781

Securities

Year	Government Bonds	Local Governments Bond	Debentures	Shares	Foreign Bonds, etc.	Total	Deposits with Banks	Grand Total
1933-34	128,469	130,871	513,100	441,031	49,197	1,262,669	335,077	2,188,696
1934-35	177,674	101,904	564,989	594,279	49,529	1,488,375	340,372	2,401,133
1935-36	218,694	87,537	600,732	696,931	53,850	1,657,744	360,320	2,668,666
1936-37	238,291	88,375	667,748	887,565	56,412	1,938,391	350,743	2,977,844
1937-38	293,412	79,564	676,828	1,081,530	86,381	2,217,714	321,780	3,331,275

IMPORTANT INSURANCE COMPANIES

	Est'd.		Est'd.
Teikoku Life	1888	Katakura Life	1921
Meiji Life	1893	Nippon Dantai Life	1934
Yasuda Life	1894	Fukuju Life	1908
Aikoku Life	1896	× Showa Life	1931
× Dai-ichi Life	1902	Fuji Life	1909
Taihei Life	1909	Tokyo Marine and Fire	1878
Nisshin Life	1907	Meiji Fire	1891
Nippon Conscription	1911	Teikoku Marine and Fire	1893
Nikka Life	1914	Nippon Marine	1896
× Fukoku Conscription	1923	Nippon Movables Fire	1898
Taiyo Life	1896	Tomei Fire and Insurance	1907
Taisho Life	1913	Toho Fire	1911
Nomura Life	1895	Chiyoda Fire	1913
Nippon Kyoritsu Life	1894	Taisho Marine and Fire	1918
Fukutoku Life	1912	Nippon Life	1889
Yurin Life	1894	Jinju Life	1894
Tokiwa Life	1913	Dai-ichi Conscription	1898
Daido Life	1902	× Chiyoda Life	1904

	Est'd.
Sumitomo Life	1907
Mitsui Life	1914
× Japan Physicians' Mutual Relief	1919
Tokyo Fire	1887
Nippon Fire	1892
Osaka Marine and Fire	1883
Yokohama Fire and Marine	1897
Kobé Marine and Fire	1907
Teikoku Fire	1912
Fuso Marine and Fire	1917
Mitsubishi Marine and Fire	1919
Taihei Fire and Marine	1919
Toyo Fire	1920
Tokyo Movables Fire	1917
Kyodo Fire	1906
Nissan Fire and Marine	1911

× Represents companies on a mutual basis.

Post Office Life Insurance

With a view to promoting the welfare of the middle and lower classes of the community, the Post Office Life Insurance Law (Law No. 42) and the Post Office Life Insurance Special Account Law (Law No. 43) were promulgated on July 8, 1916, the former being put into effect on October 1 and the latter on August 20 of the same year. The main features of the life insurance schemes may be summarized as follows:

1. This insurance is the work of the Government and is to be dealt with at the post offices.

2. The amount of insurance for a person will be from ¥20 up to ¥700.

3. The insured need not be subjected to any physical examination.

4. If the insured die within one and a half years from the conclusion of the insurance contract by some causes other than the calamities or the infectious diseases specified in law, a portion of the amount insured will not be paid.

5. This insurance is divided into Whole Life, Endowment and Infantile. Endowment policies are divided into seven kinds of the terms of 10 years, 15 years, 20 years, 25 years, 30 years, 35 years and 40 years. Infantile policies are, at present, either 15 years or 20 years endowment.

6. The age of a person to be newly insured must be between 1 and 60 years.

7. The Mortality Table constituting a basis for the computation of premium was compiled by adding 20% to the Male Mortality-Rates of the Japanese Population Table No. 2 published in 1912 by the Government Statistics Bureau. The rate of interest assumed

is 3½% per annum.

8. The premiums are to be paid monthly. Reduced premiums are prescribed for the cases in which monthly premiums are paid in a lump sum in advance.

9. The period within which premiums should be paid is fixed at one month. Two months' grace is allowed.

10. Within one year after the lapse of the policy, it may be revived.

11. When, after the conclusion of the contract, the insured either loses one or both of his limbs or becomes blind of both eyes, future premiums need not be paid.

Whenever a policy has been in force for a period of thirty years and the insured person has reached the age of 70, the policy holder concerned may propose to have his future premiums paid up.

12. When, after the lapse of five years from the conclusion of the contract, the payment of the insured sum or the repayment of the paid-in premium is made, the beneficiary shall receive an additional sum as a dividend.

13. A loan may, on the application of the policy-holder, be granted within the limits of the amount which is to be paid back on the cancellation of the insurance contract, provided, however, that such loan shall not exceed 50/100 of the amount of insurance.

14. In order to maintain and promote the health of the insured, 230 Health Consultation Stations have been established so far in pursuance of the Health Consultation Service Regulation, 1922, in the principal cities.

15. Beneficiaries or policy-holders are required to ask the judgment of the Post Office Life Insurance Committee of Inquiry prior to legal action against the Government for their contracts.

Post Office Life Annuities While the history of the Post Office Life Annuities may be traced to as far back as 1897, the authorities concerned thought it wise to introduce Post Office Life Insurance first and see how this would work. In 1926, changed social conditions and with the maturing of the first Post Office Life Insurance Endowment Policies gave favourable indications that the Annuity business would be successful, and a bill was introduced into and approved by the Diet in March.

The main features of the system which came into operation on October 1 of the same year may be summarized as follows:—

1. The annuity business is to be administered on the same system as that of the Post Office Life Insurance.

2. Annuities that may be purchased are divided into:

(1) Immediate Life Annuities.

(2) Deferred Life Annuities.

(a) Annuities commencing at the age of 50.

(b) Annuities commencing at the age of 55.

(c) Annuities commencing at the age of 60.

(d) Annuities commencing at the age of 65.

3. Post Office Life Annuities may be purchased either with or without provision for the return of the purchase money, and purchasers must select one of these two plans when they make their application.

4. The ages of persons entitled to become annuitants under this system must fall, in the case of Immediate Life Annuities between 40 and 80 inclusive and in the case of Deferred Life Annuities between 12 and 60 both inclusive.

5. The premium rates are calculated on the mortality rates by deducting 20 per cent for males and 30 per cent for females from the general mortality rate of the Japanese population.

The rate of interest allowed in the calculation of the value of annuities under the instalment payment plan is 3.5 per cent. And under the single payment plan, the rate shall be determined, from time to time, by the Minister of Communications upon the basis of the current market price of public bonds. The rate is fixed at 3.7 per cent for the present.

The reserves to be maintained against policies are worked out by the net premium method.

6. The maximum annuity that can be purchased on the life of any one person is ¥2,400, and the minimum is ¥120 under the instalment premium plan or ¥12 under the single premium plan.

7. Premiums are payable either in a single sum or by instalments; in the latter case, the premium payment is divided into four periods, namely, 10 year payment, 15 year payment, 20 year payment and ordinary payment, and the premium may also be paid yearly, half yearly or quarterly. All premiums are payable at any post office designated by the purchaser or at his residence to the collector.

8. In the case of an Immediate Annuity, the payment of annuity will begin on the date of application and continue until the death of the annuitant. In the case of a Deferred Annuity, the payment of annuity will begin on the

date the annuitant reaches a specified age and continue until the death of the annuitant.

9. Annuitants are given the right, subject to certain conditions, to claim change in their contracts.

10. Should events stipulated as reasons for the return of purchase money actually occur, such return is to be made according to prescribed conditions.

11. Provided a contract reserves the right for the purchaser or the annuitant to claim refund of premiums paid, such person may avail himself of a cash loan of not more than 50% of the premiums paid, provided that the sum is not less than ¥20 per contract or, if the proceeds are to be applied to the payment of the premium, a sum equal to one year's premiums.

12. Annuitants or purchasers are requested, before bringing a civil action against the Government in respect of their contracts, to submit their cases to the Post Office Life Insurance Committee of Inquiry.

13. A special account is established for this business.

Improvements in 1939 I. Guaranteed Period System

(A) A Guaranteed Life Annuities plan is newly added to the kinds of the old system. According to the contract of the new Guaranteed Life Annuities, the annuity shall be paid to the annuitant, as usual, as long as he lives and when he dies after the annuity began within the period specifically fixed as the guaranteed period of annuity the same amount of annuity shall be paid, during the rest of the guaranteed period, to the bereaved who is given with the right of receiving the annuity continuously, or in case the annuitant dies before the annuity begins or at the cancellation of contract the purchase money shall be returned to the policy-holder with the additional sum of compound interest at the rate of 2 per cent per annum. The new policy will protect the right of the policy-holder much further than in the cases of the old policies. The widows or the disabled men above 20 years of age may specially be benefited by the new plan.

(B) Kinds of the New Policy

There are two kinds of the Guaranteed Life Annuities; one is Guaranteed Immediate Life Annuities the guaranteed period of which begins on the date on which the contract becomes effective and continues either for the following 15 years or 20 years or 30 years; the other is Guaranteed Deferred Life Annuities, the guaranteed period

begins on the date of the commencement of annuity and continues for the following 20 years, provided that the year of age in which annuity begins is fixed either at 50 or 55 or 65.

(C) Eligible Years of Age

The years of age eligible for contracting Guaranteed Immediate Life Annuities are from 40 to 75 both inclusive in the case of the guaranteed period the duration of which extends over 15 years or 20 years, and widows or a certain disabled men of the age from 20 to 40 only are eligible to such annuities in the case of the guaranteed period the duration of which extends over 30 years.

The years of age eligible for contracting Guaranteed Deferred Life Annuities are from 12 to 60 both inclusive.

(D) Amount to be Returned

The return of the purchase money may be claimed only before the date of the commencement of annuity. The return shall be made as follows:

a. At the death of the annuitant the total amount of the purchase money may be returned with the additional sum of compound interest at the rate of 2 per cent per annum.

b. In the case of the surrender of or change in contract the same amount or 90 per cent of the amount mentioned in (a) above may be returned.

II. Special Returns of the Purchase Money to the Bereaved Family of the Annuitant Soldiers or Men Who were Killed or Died at Battles

According to the provisions of the old Post Office Life Annuities Law annuities were paid regardless of the causes of death, i.e., whether or not the annuitants die either because of wounds or diseases at the time of services in war or emergency or on other occasions. The new revised law gives a special privilege of receiving the return of the purchase money to the bereaved families of the annuitants who died in battles or in other services for national defence on or after July 7, 1937, as follows:

a. In the Case of the Contract with Provision for the Return of the Purchase Money; 90 per cent of the remaining sum of money, after the deduction of the amount receivable at the death of the annuitant according to the provision for the return of the purchase money, may specially be refunded.

b. In the Case of the Contract without Provision for the Return of the Purchase Money; 80 per cent of the amount of the purchase money may

specially be returned. But, in the cases of the Guaranteed Immediate Life Annuity and the Guaranteed Deferred Life Annuity the annuity for which has already begun, 90 per cent of the remaining sum of the purchase money, after the deduction of the unpaid annuities due to the guaranteed period calculated according to the current value, may specially be returned.

III. Payment of Premiums at the Annuitant's Option

Premiums are payable, as mentioned above, either in a single sum or by instalments. But, in the latter case, the years of payment extend for so long a period that a person may hesitate to enter the contract because of the uncertainty of his capacity of instalments in the coming years, whereas he is able to pay at once the amount corresponding to the instalments for some years, yet, at the same time, the money in hand is short for the single sum payment. To go between the two old ways of paying premiums, therefore, the new revised Law prescribes for a free-time payment of premiums "payable not at call but at any time when he has money," so that the annuitant may be able to pay any sum of money at convenient time on his policy and may at the same time increase the amount of annuity at his option.

Minor Points of Improvement

(A) On the Restrictions of the Receiver of the Return of the Purchase Money

The right for the purchaser or the annuitant to claim refund of premiums paid was extended to a person designated as "the receiver of the refund" other than the contractor or the annuitant to whom the right was exclusively reserved according to the old law.

(B) Abrogation of one of the Contracts without Provision for the Return of the Purchase Money

The contract of the Deferred Life Annuities without Provision for the Return of the Purchase Money has been rarely made, and the new contract of this kind was thought advisable not to be allowed any more.

(C) Refund of Premiums Paid on the Occasion of the Cancellation of Contract by Statute

The cancellation of contract by statute was effected according to a similar principle with that of the Post Office Life Insurance. But the revised Law prescribes for refunding the total amount of premiums paid even on such

occasion, provided that there was no important fault or ill-will on the part of the contractor.

(D) Surrender of the Right of Cancelling a Contract

The number of the contractors who surrender the right of cancelling a contract for the purpose of protecting the annuitant is considerable. The heart of such action is by no means condemnable in view of the main principle of the life annuity system. And the revised Law recognises such action by a clear statement on the subject.

(E) Refund of Loan from Annuity and the Return of the Purchase Money

Provided a contract reserves the right for the contractor to claim refund of premiums paid, such person may avail himself of a cash loan of not more than a fixed percentage of the premiums

paid. But when the refund of the loan is delayed for many years the result may be detrimental to the benefit of both the annuitant and the Government. The revised Law, therefore, prescribes for refunding the loan by a deduction from the annuity to be paid and the return of the purchase money on the expiration of a fixed period of grace.

(F) Besides, further improvements are contemplated which are to be effected by the revisions in the associated Imperial Ordinance and Departmental Orders, especially by introducing a collective life annuity system on small instalments of premiums to provide for an easier contract for the operatives in factories and mines and lower clerks in commercial companies or shops.

POST OFFICE LIFE INSURANCE.

Compiled by the Bureau of the Post Office Life Insurance,
the Department of Welfare

Financial Year	New Contracts		Revivals		Death	
	Number	Pre-miums insured	Number	Pre-miums insured	Number	Pre-miums insured
	(In yen)					
1930-31	2,434,292	2,308,475	357,792,091	131,351	103,090	17,871,493
1931-32	2,800,619	2,453,427	389,633,808	166,531	129,941	22,318,260
1932-33	2,893,356	2,412,635	371,027,797	177,317	139,218	23,617,173
1933-34	3,096,872	2,647,687	417,989,686	114,730	93,231	15,618,365
1934-35	3,150,881	2,827,243	453,306,719	78,796	65,403	10,842,614
1935-36	2,939,911	2,777,355	479,154,048	61,723	52,211	8,583,431
1936-37	3,189,259	3,051,579	597,497,484	58,028	51,028	8,472,011
1937-38	3,597,328	3,554,071	748,573,890	46,616	41,383	7,073,416

Financial Year	Expirations			Surrenders, Lapses and from Other Causes		
	Number	Premiums	Sums Insured	Number	Premiums	Sums Insured
	(In yen)					
1930-31	25,413	19,962	1,918,265	1,255,103	1,194,688	196,626,198
1931-32	55,302	43,466	4,487,420	1,544,375	1,362,097	221,776,654
1932-33	113,022	105,125	10,719,540	1,344,635	1,174,803	194,729,177
1933-34	133,608	144,528	14,808,962	964,867	869,666	144,322,939
1934-35	202,282	249,120	25,283,853	804,643	762,455	129,779,382
1935-36	283,968	313,664	31,894,568	685,812	692,006	120,202,203
1936-37	329,062	318,499	33,960,055	620,786	639,997	118,416,447
1937-38	353,632	315,919	35,201,978	505,104	549,325	106,588,529

Financial Year	Net Increase			Contracts in Force at the End of the Financial Year		
	Number	Premiums	Sums Insured	Number	Premiums	Sums Insured
	(In yen)					
1930-31	1,098,681	1,043,185	151,427,706	15,626,700	12,623,224	2,101,365,710
1931-32	1,166,785	1,009,535	151,770,677	16,793,485	13,632,759	2,253,136,387
1932-33	1,389,702	1,093,274	159,857,564	18,183,187	14,726,033	2,412,793,951
1933-34	1,874,499	1,525,281	241,389,396	20,057,686	16,251,314	2,654,183,347
1934-35	1,964,853	1,664,565	273,477,991	22,022,539	17,915,879	2,927,661,338
1935-36	1,743,170	1,580,197	295,517,371	23,765,709	19,496,076	3,223,178,709
1936-37	1,999,434	1,889,701	410,988,619	25,765,143	21,385,777	3,634,167,328
1937-38	2,436,000	2,430,385	561,931,788	28,201,142	23,816,167	4,196,083,346

POST OFFICE LIFE ANNUITIES

Compiled by the Bureau of the Post Office Life Insurance,
the Department of Welfare

Financial Year	Kind of Annuities	New Contracts			Deaths		
		No.	Pre-miums	Amt. of Annuities (In yen)	No.	Pre-miums	Amt. of Annuities
1933-34	Immediate Annuities	5,413	6,536,965	501,012	560	628,061	56,891
	Deferred Annuities under the Single Premium Plan	16,587	4,771,335	1,327,205	1,148	124,324	51,645
	Deferred Annuities under the Instalment Premium Plan	19,642	827,549	2,751,437	551	21,118	66,900
1934-35	Immediate Annuities	4,718	5,089,198	358,611	725	725,571	65,443
	Deferred Annuities under the Single Premium Plan	11,825	3,370,317	684,037	1,213	152,323	56,722
	Deferred Annuities under the Instalment Premium Plan	28,215	1,577,225	4,212,438	634	22,454	75,795
1935-36	Immediate Annuities	5,868	5,435,903	383,765	651	788,337	71,509
	Deferred Annuities under the Single Premium Plan	15,467	4,179,067	864,840	1,414	217,169	73,493
	Deferred Annuities under the Instalment Premium Plan	18,364	962,777	2,491,939	710	27,488	86,496
1936-37	Immediate Annuities	8,644	9,202,862	627,763	917	957,483	82,572
	Deferred Annuities under the Single Premium Plan	17,939	6,694,375	1,243,077	1,424	208,922	68,343
	Deferred Annuities under the Instalment Premium Plan	18,948	1,199,319	2,682,482	756	33,354	97,018
1937-38	Immediate Annuities	7,711	6,797,075	448,230	1,213	1,184,345	102,935
	Deferred Annuities under the Single Premium Plan	15,298	5,088,666	839,190	1,643	283,899	86,038
	Deferred Annuities under the Instalment Premium Plan	12,785	836,174	1,762,548	1,023	40,962	123,833

Financial Year	Kind of Annuities	Surrenders			Cancellation of Contracts by Statutes		
		No.	Pre-miums	Amt. of Annuities (In yen)	No.	Pre-miums	Amt. of Annuities
1933-34	Immediate Annuities	—	—	—	—	—	—
	Deferred Annuities under the Single Premium Plan	2,132	239,415	86,066	—	—	—
	Deferred Annuities under the Instalment Premium Plan	5,929	155,830	700,918	2,821	49,845	348,06
1934-35	Immediate Annuities	—	—	—	—	—	—
	Deferred Annuities under the Single Premium Plan	1,889	257,792	87,122	—	—	—
	Deferred Annuities under the Instalment Premium Plan	5,804	178,479	696,713	2,887	59,464	357,193
1935-36	Immediate Annuities	—	—	—	—	—	—
	Deferred Annuities under the Single Premium Plan	1,630	266,116	81,672	—	—	—
	Deferred Annuities under the Instalment Premium Plan	5,246	175,965	617,640	2,727	53,671	335,142
1936-37	Immediate Annuities	—	—	—	—	—	—
	Deferred Annuities under the Single Premium Plan	1,430	214,907	60,388	—	—	—
	Deferred Annuities under the Instalment Premium Plan	4,814	157,546	531,296	2,375	70,777	291,746
1937-38	Immediate Annuities	—	—	—	—	—	—
	Deferred Annuities under the Single Premium Plan	1,072	232,837	54,717	—	—	—
	Deferred Annuities under the Instalment Premium Plan	3,591	116,415	373,215	1,846	58,785	228,159

Financial Year	Kind of Annuities	Increase (+) or Decrease (-) from other Causes			Contracts in Force at the End of the Financial Year		
		No.	Pre-miums	Amt. of Annuities (In yen)	No.	Pre-miums	Amt. of Annuities
1933-34	Immediate Annuities	+ 90	+ 65,371	+ 4,630	24,294	18,193,749	2,245,669
	Deferred Annuities under the Single Premium Plan	- 69	- 68,424	- 14,227	167,007	24,044,120	8,989,045
	Deferred Annuities under the Instalment Premium Plan	- 55	- 71,131	- 228,148	85,363	2,940,178	10,698,043
1934-35	Immediate Annuities	+ 186	+ 145,119	+ 10,681	28,473	32,702,495	2,549,518
	Deferred Annuities under the Single Premium Plan	- 79	- 119,445	- 19,838	175,651	26,884,877	9,509,400
	Deferred Annuities under the Instalment Premium Plan	- 152	- 178,762	- 342,460	104,101	4,080,244	13,438,320
1935-36	Immediate Annuities	+ 159	+ 117,048	+ 8,430	33,649	37,467,109	2,870,204
	Deferred Annuities under the Single Premium Plan	- 88	- 148,081	- 21,859	187,986	30,432,578	10,197,216
	Deferred Annuities under the Instalment Premium Plan	- 104	- 222,721	- 489,983	113,678	4,563,176	14,400,998
1936-37	Immediate Annuities	+ 214	+ 158,711	+ 11,446	41,590	45,871,199	3,426,841
	Deferred Annuities under the Single Premium Plan	- 123	- 152,189	- 23,784	202,947	36,550,934	11,287,778
	Deferred Annuities under the Instalment Premium Plan	- 138	- 191,429	- 462,428	124,543	5,299,320	15,700,872
1937-38	Immediate Annuities	+ 248	+ 233,075	+ 16,462	48,336	51,717,005	3,788,598
	Deferred Annuities under the Single Premium Plan	- 124	- 216,153	- 32,094	215,398	40,906,265	11,953,159
	Deferred Annuities under the Instalment Premium Plan	- 144	- 221,230	- 457,541	130,732	5,676,556	16,280,552

Note: Premiums for the Deferred Annuities under the Instalment Premium Plan indicate the amount of yearly payment.

LOANS AND INVESTMENTS OF THE P.O.L.I. FUND

At the end of March, each year

	(In yen)				
	1933	1934	1935	1936	1937
Free lodging houses	571,561	538,941	409,657	392,888	342,000
Cheap eating houses	133,668	128,414	32,608	—	27,000
Public markets	5,274,586	5,031,142	4,928,921	4,891,584	5,115,000
Services for lowering cost of living	23,297	18,014 ¹	332,281	324,537	—
Medical service work	2,356,453	2,230,100	1,105,803	1,184,925	1,253,000
Maternity hospitals	248,309	242,554	228,152	210,292	199,000
Public tuberculosis Sanatoriums	941,557	—	—	—	—
Redemption of old debts incurred for the running of public tuberculosis sanatoriums	172,987	1,643,152	922,710	880,623	828,000
Labour exchanges	242,211	225,549	206,314	166,095	151,000
Public pawn shops	1,530,751	—	—	—	—
Loans for the public pawnshop funds	120,172	1,582,612	1,231,910	1,055,682	888,000
Day nurseries	240,959	222,123	193,680	25,489	1,000
Public bath-houses	101,030	90,983	101,760	48,449	69,000
Establishment and maintenance of peasant farmers	97,407,642	110,788,262	124,294,493	138,838,315	147,658,000
Local improvement & adjustment of boundaries	1,594,312	1,943,123	1,852,775	1,082,016	1,051,000
Petty amount industrial fund	933,324	133,306	127,561	146,926	167,000
Building schemes and private dwelling-houses	8,390,534	—	—	—	—
Redemption of old debts incurred for the building of dwelling houses	10,388	8,424,216	6,303,541	5,874,791	5,030,000

INSURANCE

	1933	1934	1935	1936	1937
Epidemic hospitals	2,827,729				
Redemption of old debts incurred for the building of epidemic hospitals	453,578	2,214,257	1,754,615	1,554,199	1,701,000
Sewerage	12,951,452				
Redemption of old debts incurred for the aforesaid purpose	8,524,231	14,905,991	11,347,278	12,483,7591	11,748,000
Garbage equipment	1,477,951	613,968	446,484	366,163	266,000
Cooperative use of farm tools	2,127,529	2,124,705	1,244,861	874,265	650,000
Primary schools	33,886,447				
Redemption of old debts incurred for the aforesaid purpose	3,316,921	20,959,879	13,914,558	18,185,328	31,404,000
Young People's schools	48,666	42,843	76,308	49,148	198,000
Public hospitals	523,749				
Redemption of old debts incurred for the aforesaid purpose	196,029	558,163	549,348	889,955	1,010,000
Water-works	33,914,413				
Redemption of old debts incurred for the aforesaid purpose	18,724,771	16,818,483	8,421,714	18,400,387	23,144,000
Cooperative equipment for aquatic industry	1,339,670	1,525,936	1,179,282	1,552,721	1,059,000
Adjustment of arable lands	70,161	79,506	122,369	658,703	658,000
Office buildings in cities, towns and villages	404,822	378,094	246,682	935,171	1,530,000
Advance against the insurance policies	85,452,269	97,525,839	107,977,639	120,798,612	136,277,000
Total including others	333,173,405	295,139,511	294,944,061	363,980,582	422,108,000
Investments in Government bonds	105,700,088	116,480,821	140,585,131	161,422,150	205,086,000
Investments against other securities	142,200,252	265,581,610	406,895,647	460,311,791	508,320,000
Deposits at the Bureau	74,245,436	80,832,164	37,315,003	13,123,503	925,000
Cash on hand	1,121,700	370,000	475,000	1,480,600	1,253,000
Grand total including others	656,440,881	758,413,106	881,076,864	1,006,138,063	1,142,178,000

State Live-Stock Insurance

The live stock insurance business is making steady progress. In March, 1930 there were only 6 societies engaged in the live stock insurance business, and

only 1,304 head were insured for an aggregate amount of ¥127,622. The amount had increased to ¥19,491,871 in March, 1934 and to ¥39,790,494 in March, 1937. The following shows the business results of the last 5 years:

LIVE-STOCK INSURANCE

March of	Insurance Societies	Insured Animals	Insured Amount	Premiums Received (In yen)	Claims Paid
1933	209	173,450	13,024,819	279,630	167,002
1934	234	263,550	19,491,871	424,650	278,808
1935	241	367,542	27,542,940	642,962	365,603
1936	—	419,951	32,146,253	767,501	436,071
1937	—	503,959	39,790,494	935,107	582,154

STATE HEALTH INSURANCE

LIVE-STOCK INSURANCE CLASSIFIED BETWEEN HORSES AND CATTLE

March of		Insured Number of Animals	Insured Amount	Premiums
1933	{ Cattle	109,338	8,049,332	130,292
	{ Horses	65,738	5,071,505	151,804
1934	{ Cattle	166,148	12,372,551	204,467
	{ Horses	99,360	7,276,531	224,621
1935	{ Cattle	238,990	18,174,512	323,922
	{ Horses	130,602	9,417,976	323,620
1936	{ Cattle	279,693	22,134,347	404,189
	{ Horses	142,601	10,206,922	369,187
1937	{ Cattle	353,324	28,795,083	530,530
	{ Horses	153,772	11,272,220	412,891

State Health Insurance

On March 31, 1936, the number of labourers holding policies in the State Health Insurance was 3,043,934, an increase of 717,240 as compared with the previous year. Of the total, 3,026,650, were compulsorily insured; the num-

ber of contracts under Government control was 2,096,657 as against 947,277 of contracts under the control of 370 health insurance associations.

In 1936-37, the amount paid out to the beneficiaries reached ¥45,882,742 for 10,848,429 cases. For full particulars figures follow:

HEALTH INSURANCE

March of	Total	Persons Insured Compulsorily	Persons Insured Voluntarily	Persons Insured in Continuation Voluntarily
1933	1,720,199	1,684,509	35,530	160
1934	2,001,481	1,965,026	36,333	122
1935	2,326,694	2,306,322	20,247	125
1936	3,043,934	3,026,650	17,098	186
1937	3,451,470	3,446,696	4,652	122

Under Government Control

March of	Total	Persons Insured Compulsorily	Persons Insured Voluntarily	Persons Insured in Continuation Voluntarily
1933	1,122,141	1,117,478	4,503	160
1934	1,294,926	1,290,439	4,365	122
1935	1,503,550	1,497,075	6,350	125
1936	2,096,657	2,092,697	3,774	186
1937	2,346,637	2,341,863	4,652	122

Under Control of Health Insurance Associations

March of	Number of Associations	Total	Persons Insured Compulsorily	Persons Insured Voluntarily	Persons Insured in Continuation Voluntarily
1933	347	598,058	567,031	31,027	—
1934	345	706,555	674,587	31,968	—
1935	349	823,144	809,247	13,897	—
1936	370	947,277	933,953	13,324	—
1937	379	1,104,833	1,104,833	—	—

Premiums Collected & Insured Money Paid Out

During	Total		Under Government Control		Under Control of Health Insurance Associations	
	Premium	Insured Money Paid Out	Premium	Insured Money Paid Out	Premium	Insured Money Paid Out
1932-33	26,119,521	23,764,305	15,177,291	13,648,413	10,942,230	10,115,892
1933-34	29,304,218	26,636,928	17,370,322	15,218,077	11,933,896	11,419,851
1934-35	34,849,101	31,185,992	20,421,357	17,697,443	14,427,844	13,318,780
1935-36	46,588,307	41,633,545	29,119,041	24,814,765	17,469,266	16,818,780
1936-37	54,260,945	45,882,742	33,455,029	28,868,160	20,805,916	19,014,502

Health Insurance for the Salaried Classes

A health insurance system for salaried employees has at last been enacted into law. The bill approved at the recent session of the Diet proposes to answer the urgent need for the maintenance and promotion of the health of the nation. The present insurance scheme aims to do for salaried employees exactly what the National Health Insurance and other forms of social insurance undertake to do for the protection of persons living in rural districts and fishery villages, workers in factories and mines, and small and medium-sized tradespeople.

The present health insurance is made compulsory for the purpose of rendering the insurance facilities accessible to as many persons as possible and also in order to reduce as far as feasible the contribution by each insured person. For one thing, if the insurance is left voluntary, there is strong likelihood that weak and ailing persons only will be induced to become the insured which, of course, is not a desirable thing for the system. The operation of the present health insurance system will be limited to the cities and such towns and villages as are specially designated by the competent Minister of State.

In the second place, the scheme will be applicable to the offices or places of business having not less than ten persons constantly in their employ. A business office or a group of stores having not less than 300 employees may, with the approval of a majority of the insured persons, organize an Association for Health Insurance for the Salaried Classes. Although it is often in small offices and stores that health protection is more urgently needed, they must of necessity be excluded for the present from the application of this insurance system.

Thirdly, the scope of business offices or stores to which the system is ap-

plicable is for practical purposes limited to the following:

(a) trading and commerce, (b) finance and insurance, (c) custody and leasing of property, (d) commission agencies, (e) collection of money, information, and advertising, and (f) other business to be designated by Imperial Ordinances. It may be added in this connection that persons with incomes of not less than ¥1,200 a year may not receive the insurance protection.

The present health insurance system provides for various benefits for the insured person in cases of illness, accidents, burial, childbirth and maternity. It is the purpose of the scheme gradually to extend its benefits and protection to members of the families of the insured persons. Below is a brief account of the insurance benefits provided for by the system.

(A) **Medical Expense** In case an insured person receives medical care for illness or accidents, 80 per cent of the expenses is paid by the System. This aid extends beyond the ordinary medical care to hospital, operation and nursing expenses and is granted for a period of six months in the same case. In special instances designated by the competent Minister of State where prolonged medical care is needed, the period of the aid may be extended for not more than one year. Where, again, an employee is under medical treatment when the person loses qualification to be insured by reason of retirement or otherwise, the aid may be continued as prescribed, provided that the same person shall have previously been in the employ for a stated period.

(B) **Allowance in case of Illness or Accident** Where an insured person is compelled, on account of illness or accident, to rest from work for any length of time, the person will receive an allowance in addition to the aid mentioned above. The allowance will in ordinary cases amount to 50 per cent of the regular pay, and will be given

after three months of absence in the case of those who receive monthly pay and after a period of ten days in the case of those who receive daily pay; for in both cases the regular pay is continued during the respective periods.

(C) **Burial Allowance** In case of the death of an insured person and where the burial is effected by the bereaved family whom the deceased had been supporting, a grant of money corresponding to one month's pay but not less than thirty yen will be made in aid of burial expenses. Where there is none left entitled to receive this award, the person effecting the burial will be compensated up to the extent given above. When a person dies within three months after the loss of the qualifications for the insurance protection or when any person dies who had been receiving the insurance protection after having been disqualified for the insurance or when such person dies within three months after ceasing to receive the benefits, the same burial allowance or expense will be paid likewise.

(D) **Childbirth** When an insured person is delivered of a child, a sum of twenty yen will be awarded towards the necessary expenses. In such cases, it may be feasible to send the person to a maternity hospital or otherwise give the needful assistance. In this instance the award mentioned above will be ten yen instead of twenty yen. The benefits in connection with childbirth will be available where the per-

son had been insured at least for a stated period during one year previous to the event. Where, again, the childbirth occurs within six months after the person had been disqualified, she may receive the benefits as well as the maternity allowance mentioned below.

(E) **Maternity Allowance** In addition to the foregoing award at childbirth, the insurer will grant for a stated period immediately before and after the childbirth an allowance corresponding to 50 per cent of a day's earnings. The recipient of the allowance may not receive any illness or accident allowance simultaneously.

The foregoing description roughly covers the work of the health insurance system for the salaried classes. Not content with the protection of the sick and weak, the scheme plans to take more fundamental measures calculated to promote the health of the salaried classes.

Lastly, as regards the premiums, the contributions are, as in the case of other social insurances, made half and half between the employers and the employees; the rate is fixed generally at about 2.5 per cent of the monthly income. At this rate, where a person has an income of sixty yen a month the premium will be ¥1.50, for which ¥0.75 each will be contributed by the employer and the employee. Under this arrangement, the cost of the system to the Treasury will practically correspond to the administrative expenses of the institution.

CHAPTER XIII AGRICULTURE

Farm Households and Arable Land

Farm Households Number of farm households totalled 5,574,879 at the end of 1937, which is 42% of the total number of households in Japan proper. Comparison with that of the previous year indicates a decrease of 22,584 or 0.4 per cent.

As classified into those engaged wholly or in part in agriculture, the figure consists of 4,180,672 of the former, and 1,394,207 of the latter.

Farm households cultivating their own lands numbered 1,733,997; the number of tenant-farmers and households cultivating their own lands together with those leased being 1,500,994 and 2,339,888 respectively.

Classified by size of area cultivated, farm-households cultivating less than 0.50 cho number 1,884,575, a decrease of 11,282 from the previous year, those between 0.50 and 0.99 cho, 1,914,018, a decrease of 8,592, between 0.99 and 1.99 cho 1,262,814, an increase of 708 over the previous year, and those over 1.99 cho, 522,065, a decrease of 2,919.

Owners of Arable-lands The number of owners of arable-lands totalled 5,141,968 at the end of 1937 decreasing from that of the previous year by 8,252. When classified according to area owned, those who own less than 0.50 cho

number 2,550,259, and those owing from 0.50 cho to under 0.99 cho number 1,304,924. In this way the greater the areas, the less number of owners, and so those owing 50 cho and over are only 3,252 (or 0.1 per cent) in number. In the light of the tendency during the previous ten years general increase was traceable in the total number, but it turned to decrease in 1937, while by reference to the tendency of number fluctuation according to area owned, those under 3 cho are pursuing a steady upward course, those owning more than 3 cho showing the reverse trend.

Area of Arable-lands Area of arable-lands at the end of 1937 was computed at 6,098,435 cho, occupying 15% of the total area of Japan proper. This figure consists of 3,217,928 cho (53%) of rice-fields and 2,880,506 cho (47%) of upland-farms. Comparison of these figures with those of the previous year indicates a slight increase on the part of the former and increase of 12,305.4 cho (0.4%) in the latter.

Classified into those cultivated by owners of lands and those by tenant-farmers, area cultivated by the former was 3,266,045 cho (54%), increasing by 12,325.9 cho (0.4%), the latter being 2,832,389 cho (46%), increase by 222.6 cho (0.01), both as against the figures of the previous year.

FARM HOUSEHOLDS AND ARABLE LANDS IN JAPAN PROPER

(Compiled by the Ministry of Agriculture and Forestry)

FARM HOUSEHOLDS					
Year (At the Year End)	1933	1934	1935	1936	1937
Total	5,621,535	5,617,486	5,610,607	5,597,465	5,574,879
Households principally engaged in agriculture	4,126,052	4,144,218	4,164,035	4,176,422	4,180,672
Households partly engaged in agriculture	1,495,483	1,473,268	1,446,572	1,421,043	1,394,207
Classified by the mode of tenure of the lands					
Households cultivating their own lands	1,745,847	1,740,219	1,732,086	1,731,139	1,733,997
Tenant-farmers	1,499,855	1,508,319	1,518,181	1,517,701	1,500,994
Households cultivating their own lands together with leased land	2,375,633	2,368,948	2,360,340	2,348,625	2,339,888
Classified by the size of agricultural area under operation					
Under 0.5 cho	1,920,943	1,918,507	1,908,642	1,896,357	1,884,575

VALUE OF PRODUCTION

409

Year (At the Year End)	1933	1934	1935	1936	1937
0.50 cho — 0.99 "	1,927,660	1,921,420	1,919,073	1,914,018	1,905,425
0.99 " — 1.99 "	1,247,517	1,250,818	1,254,817	1,262,106	1,262,814
1.99 " — 2.99 "	319,351	321,088	322,583	320,615	318,182
2.99 " — 4.99 "	129,529	129,209	127,920	126,540	125,539
4.99 cho and over	76,835	76,444	77,572	77,829	78,344

Excluding owners of arable-lands not engaged in cultivation.

OWNERS OF ARABLE-LANDS

Year (At the Year End)	1933	1934	1935	1936	1937
Total	5,119,936	5,096,195	5,147,412	5,150,220	5,141,968
Under 0.50 cho	2,550,437	2,519,322	2,555,398	2,556,630	2,550,259
0.50 cho — 0.99 "	1,284,076	1,289,449	1,304,482	1,305,400	1,304,924
0.99 " — 2.99 "	899,506	900,677	905,956	909,933	909,035
2.99 " — 4.99 "	222,779	223,977	221,245	218,851	219,346
4.99 " — 9.99 "	113,104	112,681	111,128	110,549	109,799
9.99 " — 49.99 "	46,400	46,542	45,788	45,580	45,353
49.99 cho and over	3,634	3,547	3,415	3,277	3,252

ARABLE LANDS

Year (At the Year End)	(In cho)				
	1933	1934	1935	1936	1937
Total	6,028,764	6,037,645	6,058,753	6,085,887	6,098,435
Cultivated by owners of the lands	3,185,682	3,199,018	3,220,465	3,253,720	3,266,047
Cultivated by tenant-farmers	2,843,082	2,838,627	2,838,288	2,832,167	2,832,389
Rice-fields	3,225,628	3,219,440	3,219,326	3,217,686	3,217,929
Cultivated by owners of the lands	1,508,835	1,505,964	1,517,113	1,526,760	1,567,234
Cultivated by tenant farmers	1,716,793	1,712,476	1,702,213	1,690,926	1,650,695
Upland-farms	2,803,136	2,819,205	2,839,427	2,868,201	2,880,506
Cultivated by owners of the lands	1,676,847	1,693,054	1,703,352	1,726,960	1,698,812
Cultivated by tenant-farmers	1,126,289	1,126,151	1,136,075	1,141,242	1,181,694

Rise in Land Value

The value of arable lands generally went up in 1938, the average percentage of rise being 10 per cent, unprecedented since the years of the World War. The reasons for the rise are the rise in prices of agricultural products, the reduction of taxes on farm lands because of the revisions in the rates of rent, the decrease of tenant disputes on account of the emergency, and the increase of incomes of farmers.

PRICES OF FARM LANDS IN 1938

(In yen per tan)			
	Average	Rise over	Per-
	Price in	Japan the	centage
	Proper	Previous	of Rise
Rice field			
First class	656	54	9.0
Second class	519	49	10.4
Third class	365	37	11.3
Upland farm			
First class	420	31	8.0
Second class	304	26	9.4
Third class	192	21	12.3

Value of Production

The total value of production by 5,574,879 farm-households in 1936 amounted to ¥4,328,173,551 (¥776 per household) including farm products, minor industries, live stock, cocoons, raw silk and forestry production. (For details of the last three items see following chapters.)

PRODUCTION BY FARMERS IN 1937

(In yen)	
Rice	2,071,889,318
Barley and Wheat	403,613,540
Vegetables	259,306,238
Fruits	92,114,502
Sweet potatoes	91,214,087
Other agricultural products	325,515,912
Live stock production	261,595,010
Cocoons	419,609,741
Wood and bamboo	403,315,203
Total	4,328,173,551

VALUE OF PRODUCTION BY FARMERS IN JAPAN PROPER

(as compared with that of factories)

(Compiled by the Ministry of Agriculture and Forestry)

Year	Production by Farmers		Production in Factories		Year	Production by Farmers		Production in Factories	
	Amount Index (In ¥1,000)	No.	Amount Index (In ¥1,000)	No.		Amount Index (In ¥1,000)	No.	Amount Index (In ¥1,000)	No.
1925	5,030,767	100	6,924,911	100	1932	2,750,221	55	5,982,469	86
1926	4,343,372	87	7,001,396	101	1933	3,390,178	68	7,871,364	114
1927	4,075,237	81	6,745,861	97	1934	3,120,826	62	9,390,060	136
1928	4,013,401	80	7,205,522	104	1935	3,589,188	71	10,836,894	156
1929	3,996,374	80	7,716,798	111	1936	4,125,096	82	12,257,588	177
1930	2,787,856	56	5,962,810	86	1937	4,670,066	93	16,412,452	237
1931	2,373,369	47	5,174,579	75					

Note: Production by farmers includes forestry and fishery products.

Rice Statistics
Supply and Demand of Rice

The supply and demand of rice in Japan proper for the past 10 years were as follows:

Rice Year	SUPPLY (In koku)			
	Brought over from the Previous Year	Production of the Year Before	Imports including those from Colonies	Total
1929	7,840,192	60,303,089	8,909,410	77,052,691
1930	7,027,557	59,557,694	8,602,411	75,187,662
1931	5,719,241	66,875,535	11,486,145	84,080,961
1932	9,140,247	55,215,265	11,602,116	75,957,626
1933	8,907,000	60,390,098	12,747,000	82,045,000
1934	9,007,000	70,829,000	13,744,000	93,582,000
1935	16,431,000	51,840,000	13,018,000	81,289,000
1936	9,936,000	57,457,000	14,194,000	81,587,000
1937	8,006,000	67,340,000	11,879,000	87,225,000
1938	7,512,000	66,320,000	15,271,000	89,103,000

Rice Year	DEMAND				
	Exports including those to Colonies	Carried forward to Next Year	Consumption	Total Population in Japan Proper	Per capita Consumption
1929	539,307	7,027,557	69,485,827	63,078,000	1.102
1930	539,963	5,717,117	68,930,582	64,450,000	1.076
1931	1,963,389	9,140,247	72,977,325	64,366,000	1.124
1932	631,613	8,907,430	66,418,583	66,296,000	1.007
1933	623,000	9,007,000	72,413,000	67,238,000	1.090
1934	681,000	16,389,000	76,510,000	68,194,000	1.142
1935	790,000	9,936,000	70,538,000	69,251,000	1.042
1936	550,000	8,006,000	73,040,000	70,258,000	1.039
1937	648,000	7,512,000	79,066,000	71,252,000	1.110
1938	587,000	8,493,000	80,022,000	72,223,000	1.108

The rice year begins with November and ends with October of the following year, and hence the production of the year 1929 represents the crop in the autumn of 1928.

RICE CONDITIONS IN KOREA

Year	Production Japan Proper (In 1,000 koku)	Exports to Japan Proper (In 1,000 koku)	Consumption
1928	13,511	5,377	8,583
1929	13,703	5,167	8,584
1930	19,183	7,929	10,537
1931	15,873	7,197	8,392
1932	16,346	7,100	8,508
1933	18,192	7,990	8,710
1934	16,554	8,955	8,134
1935	17,884	8,434	8,508
1936	19,410	8,970	12,579
1937	26,797	—	15,787
1938	24,139	—	—

RICE CONDITIONS IN FORMOSA

Year	Production Japan Proper (In 1,000 koku)	Exports to Japan Proper (In 1,000 koku)	Consumption
1928	6,841	2,387	4,793
1929	6,451	2,172	4,782
1930	7,111	2,071	4,988
1931	7,516	2,663	4,874
1932	8,072	3,338	4,676
1933	8,666	4,123	4,782
1934	9,088	5,123	4,270
1935	9,122	4,511	4,201
1936	9,558	4,823	4,634
1937	9,233	4,856	4,590
1938	9,707	—	—

CONSUMPTION OF RICE

According to Purposes, in Japan Proper
(From November 1, 1937 to
October 31, 1938)
(In 1,000 koku)

Used for	Amount used	Percentage
Seeding	844	1.05
The table	69,679	87.07
Saké brewery	3,874	4.84
Making "mochi" (rice cake)	3,754	4.69
Making Japanese sauce etc.	554	0.69
Making Japanese confectionaries and jelly	1,032	1.29
Paste	58	0.07
Others	227	0.28
Total	80,022	100.00

Rice in 1938

Price of Rice The standard price for 1938, or for rice cropped in 1937, was fixed at ¥27.30 minimum and ¥35.40 maximum per koku of unhulled rice. The actual maximum quotation went

up as high as ¥36.77 in December in the Tokyo exchange and the average for the year was ¥35.79, a rise of ¥2.60 as compared with the previous year. The standard price for 1939, or for rice cropped in 1938 is fixed at ¥29.90 minimum and ¥35.40 maximum, i.e. the minimum price is raised by ¥2.60 while the maximum price is left same with that of the previous year. The main reason for keeping the maximum price in the same standard with the previous year is to control the price of rice in accordance with the general national policy of price control for the wartime economy of the nation, because, in Japan, the price of rice is an important barometer of prices of other commodities.

The standard prices for the years since the enactment of the Rice Control Law in 1933 have been as follows:

STANDARD PRICES OF RICE

(In yen, per koku)

For the Year	Standard Price			Price adjusted by the general prices of other commodities
	Minimum	Maximum	Stretch	
1934	22.70	30.50	7.80	25.26
	23.30	30.50	7.20	24.41
1935	24.30	31.50	7.20	24.88
1936	24.60	33.20	8.40	27.23
1937	24.90	33.90	9.00	29.09
1938	27.30	35.40	8.10	33.67
1939	29.90	35.40	5.50	38.26

Cost of Production of Rice According to the report of the Imperial Farm Association the cost of production of rice in 1938 was ¥28.45 per koku in the case of landed farmers, a rise of ¥2.58 (10 per cent) as compared with the previous year, and ¥30.77 in the case of tenants or a rise of ¥2.06 (7.2 per cent), making an average of ¥29.54 or a rise of ¥2.37 (8.7 per cent).

The wartime economy of the country increased expenses in almost all items of cost as shown in the following table:

COST OF PRODUCTION OF RICE

IN 1938

(In yen, per koku)

Items	1938	Landed Farmer Increase over the Previous Year	Tenant Increase over the Previous Year	
Directly concerned				
Seeds	0.31	0.02	0.30	0.01

Items	Landed Farmer Increase over the Previous Year		Tenant Increase over the Previous Year	
	1938	1937	1938	1937
Fertilizer	4.87	0.45	4.67	0.43
Labour	9.14	1.13	9.27	0.84
Animal power	1.13	0.17	1.01	0.12
Material	0.82	0.14	0.74	0.08
Total	16.28	1.91	15.99	1.48
Indirectly concerned				
Improvement in land	0.04	(-)0.02	0.01	0.00
Tools	0.92	0.12	0.84	0.02
Buildings	0.63	0.01	0.45	(-)0.01
Taxes	2.22	(-)0.21	0.40	(-)0.02
Interest on the investment on land	8.36	0.77	0.15	(-)0.13
Interest on tenant right	—	—	0.22	0.07
Rate of tenant	—	—	12.71	0.65
Total	12.17	0.67	14.78	0.58
Grand Total	28.45	2.58	30.77	2.06

Rice Crop in 1938 According to the report of the Ministry of Agriculture and Forestry the rice crop in 1938 amounted to 65,869,092 koku, decreasing 450,672 koku or 0.7 per cent from

the previous year, but showing an increase of 3,111,944 koku or 5.0 per cent over the average crop for the preceding 5 years. The area devoted to rice was 3,220,729 chobu and the average crop per tan (0.1 chobu or 0.245 acre) was 2.045 koku or 10.468 American bushels.

The growth of the rice plant was hindered by rainy weather conditions in the months right after its plantation in a part of the country, but later the weather was mostly favourable for the growth throughout the country, especially at the time of blooming, so that the last outcome showed a 2.7 per cent increase over the second forecast.

The comparison of the last 6 years is as follows:

	RICE CROP IN 1933-1938	
	Area Planted (In Chobu)	Rice Crop (In Koku)
1933	3,173,203.3	70,829,117
1934	3,172,810.6	51,840,182
1935	3,204,178.9	57,456,976
1936	3,206,963.0	67,339,699
1937	3,217,051.5	66,319,764
Average for 1933-1937	3,194,841.5	62,757,148
1938	3,220,729.4	65,869,092

VALUE OF CEREAL PRODUCTION IN JAPAN PROPER

(Area in cho, Value in yen)

	1933	1934	1935	1936	1937	1938
Total Area	4,977,524	4,985,421	5,051,186	5,082,713	5,095,489	—
Production (Value)	1,680,499,165	1,660,995,963	1,908,806,000	2,226,310,331	2,509,520,303	—
Rice Area	3,173,203	3,172,811	3,204,179	3,206,963	3,217,051	3,220,729
Production	1,433,590,419	1,384,621,927	1,611,431,932	1,865,268,551	2,071,889,318	—
Wheat Area	616,476	648,498	663,868	688,959	724,602	725,101
Production	114,032,716	121,743,980	131,115,603	173,215,048	210,937,714	202,001,262
Oats Area	128,215	120,402	122,297	125,557	122,594	137,371
Production	8,141,403	12,393,484	9,664,987	12,600,640	17,224,780	22,477,540
Barley Area	347,295	331,745	341,948	340,773	330,182	357,359
Production	44,127,198	51,164,562	57,100,667	60,871,161	75,185,874	87,017,259
Rye Area	437,659	424,385	439,714	439,570	429,494	414,823
Production	55,518,156	71,293,670	77,303,560	84,165,931	100,130,993	93,679,951
Other cereals Area	284,676	287,580	279,180	280,891	271,566	—
Production	25,089,273	19,778,340	22,189,000	30,169,000	34,151,624	—

Other Farm Productions

Leguminous Plants Area of leguminous plants in 1937 was 606,184 cho and the production was valued at ¥96,048,-

470. During the past decade the area planted has been pursuing a slow downward movement, while a sharp reduction experienced by production was more than made good by the increase

of 1933. Soy-beans and azuki (red) beans are predominant both in area and production. The area of plantation and the amount of production of these two articles in 1937 were as follows:

	(In cho)	(In koku)	(In yen)
Soy-beans	331,572	2,842,543	50,848,576
Azuki beans	104,268	833,333	17,272,620

Tuber and Root Crops Area cultivated with tuber and root crops in 1937 was 664,268 cho and the value realized from their production was ¥243,066,285 and both showed an increase as compared with preceding years. From the standpoint of area and production, sweet potatoes, 'dalkon' (giant radish), sato-imo and potatoes are predominant.

	(In cho)	(In kan)	(In yen)
Sweet potatoes	288,776	1,030,115,309	91,214,097
Dalkon	107,077	654,792,501	46,480,168
Potatoes	171,125	551,170,209	48,595,431

Industrial Crops Area cultivated with industrial crops in 1937 amounted to 294,079 cho and the production was valued at ¥140,291,145.

Chief products are summarized below:

Tobacco	17,049,810 kan	¥46,832,123
Sugar cane	1,093,358,599 kin	11,989,058
Rapeseed	1,102,630 koku	24,960,741
Rushes	17,268,674 kan	9,295,377
Insecticide flowers	2,549,592 kan	8,214,032
Arum	15,296,744 kan	9,563,757

Vegetables Area under vegetables in 1937 was 221,908 cho and the value of the production was estimated at ¥128,122,197.

Chief products are given below:

Water-melons	121,729,228 kan	¥20,878,955
Taukena	192,156,031 "	20,616,731
Egg-plants	123,655,273 "	17,687,163
Cucumbers	78,863,260 "	12,674,690
Negi (onion)	67,255,639 "	12,363,085
Pumpkins	89,229,812 "	11,114,608
Tomatoes	43,663,258 "	7,397,441

Fruits The production of fruits in 1937 was valued at ¥92,114,502, having increased by ¥10,302,051 as against the figure of the previous year.

Predominant are the following:

	kan	¥
Mandarin oranges	117,018,552	25,357,178
Persimmons	61,528,088	13,092,734
Japanese Pears	42,743,403	11,776,705
Apples	41,572,442	14,884,442
Grapes	18,411,989	6,479,552

Tea Tea grown in 1937 was 14,376,-762 kan in quantity and ¥34,356,516 in value. Review of the past decade indicates an unbroken rise in production as a whole, while fluctuations in values of production have been brought about by falling-off of prices.

Livestock and Poultry (1) Horses. Horses at the end of 1936 numbered 1,431,920, consisting of 816,599 female and 615,321 male. Foals and horses died to the number of 127,316 and 27,-218 respectively. The increase in number during the past decade has been very slow, often tending towards decline.

(2) Cattle. Cattle at the end of 1936 numbered 1,770,938 (female, 1,327,872 male, 443,066). Calves and cattle died numbered 313,994 and 17,635 respectively. The tendency of the past ten years was a steadily increasing one.

(3) Swine. Number of swine at the end of 1936 totalled 1,110,000. During the year, swine died or killed numbered 113,000. The rising of swine has been showing a sharp advance during the past decade, the number at the beginning of the decade being nearly doubled by the close of the same period.

(4) Sheep and Goats. Sheep and goats at the end of 1937 numbered 89,-815 and 293,302 respectively, both increasing as compared with the previous year, and the tendency during the past ten years has been towards increase.

Generally speaking, the raising of sheep and goats is still on quite a small scale in spite of this marked progress.

(5) Fowls. The total number of fowls at the end of June, 1937 was 51,266,000 (valued at ¥38,905,000). During the past ten years the number has increased by nearly 100 per cent.

Livestock Products (1) Milk. The quantity of milk obtained in 1937 amounted to 262,314,993 litres valued at ¥37,167,007. The number of cows milked was 107,878 at the year end.

(2) Meat and Animals Slaughtered. The number of slaughter-houses at the end of 1937 was 714 and number of animals slaughtered and the quantity of meat obtained were as follows:

Number of Animals Slaughtered

Horses	71,427
Cattle	345,385
Calves	43,661
Swine	1,222,249
Sheep	2,534
Goats	4,207
Total	1,689,463

Quantity of Meat Obtained

	kilogramme
Horses	10,497,131
Cattle	64,523,122
Calves	2,647,629
Swine	60,042,749
Sheep	46,927
Goats	43,654
Total	137,801,212

(3) Dairy and Meat Products. Dairy production in 1937 amounted to 58,687,560 kin valued at ¥29,077,079. Meat products totalled 7,818,065 kin valued at ¥4,813,533.

(4) Eggs. Number of eggs obtained during the year ending June, 1937 was as follows:

July, 1936—June, 1937		
	Number	Value
Fowls'	3,642,988,779	¥100,129,706
Ducks'	14,757,849	441,573

During the past decade the production of eggs has shown a substantial increase especially as regards fowls' eggs of which production in 1931 more than doubled the figure of 1922.

Village Societies

The co-operative societies of this country have developed from the older credit societies. The business of granting credits still forms the most important of the activities of the co-operative societies. There are at present about 15,000 of these societies throughout the country, which have a total membership of over 6,000,000. Of these institutions 13,400 are loan associations which are mostly located in agricultural villages, accommodating their members with industrial and economic funds and accepting deposits from their mem-

bers and public organizations.

Of the 13,400 loan associations more than 1,300 are engaged only in supplying loans to members; but their number is gradually decreasing because the Government is, in line with a five-year co-operative expansion programme, encouraging them to function as trading, purchasing and utilization associations as well.

Those which discount bills and accept deposits from non-members are called credit associations in the cities and are placed under the supervision of the Finance Ministry, while those in villages are controlled by the Ministry of Agriculture and Forestry.

The latest statistics show that deposits with these credit associations throughout the whole country total approximately ¥1,500,000,000, and their loans amount in all to about ¥1,000,000,000. They are playing an important part as mutual credit associations for the masses, both in agricultural villages and towns.

As to the credit associations in cities, their number is 274, with a total of 310,000 members, having ¥277,000,000 in deposits and ¥190,000,000 in advances. Some of them have from ¥5,000,000 to ¥8,000,000 each in deposits but the average amount for one institution is ¥790,000 against some ¥630,000 in advances.

There are two central institutions designed to facilitate the activity of these associations. One is called the Shinyo Kumiai Rengokai or Federation of Credit Associations, which represents the credit associations of each Prefecture, and the other is the Sangyo Kumiai Chuo Kinko, or the Central Chest for Co-operative Associations, which was established for regulating the movement of funds of the Federation above mentioned and the industrial associations all over Japan. (See Chapter IX)

VILLAGE CO-OPERATIVE SOCIETIES

Number of Co-operative Societies

(At the year end)

	1932	1933	1934	1935	1936	1937
Total	14,352	14,651	14,815	15,028	15,460	14,512
Credit	2,051	1,756	1,511	1,313	1,117	895
Trading	325	311	332	301	300	297
Purchasing	336	332	332	314	301	270
Utilization	312	316	306	298	286	243
Trading and purchasing	307	292	263	258	239	170
Trading and utilization	267	268	264	256	247	201
Purchasing and utilization	116	131	144	152	162	174
Trading, purchasing and utilization	478	490	496	518	492	412
Credit and trading	196	175	166	157	140	71
Credit and purchasing	1,759	1,370	1,056	760	504	219

VILLAGE SOCIETIES

	1932	1933	1934	1935	1936	1937
Credit and utilization	117	106	96	82	84	75
Credit, trading and purchasing	3,194	2,718	2,361	1,952	1,560	988
Credit, trading and utilization	42	38	32	33	37	34
Credit, purchasing and utilization	355	286	248	204	160	101
Credit, trading, purchasing and utilization	4,497	6,062	7,206	8,430	9,831	10,362
Classified by the organization						
Limited liability	12,968	8,363	5,973	4,499	3,062	724
Unlimited liability	990	1,182	971	934	934	830
Guaranteed liability	394	5,106	7,871	9,595	11,464	12,958

Operation of Co-operative Societies
(At the end of March)

(Amount in yen)

	1933	1934	1935	1936	1937
Number of societies investigated	13,106	13,446	13,616	13,864	14,140
Number of members	4,978,248	5,238,253	5,505,897	5,795,139	6,127,425
Capital					
Amount authorized	312,668,822	319,331,829	326,037,985	334,570,344	342,183,330
Amount paid up	239,725,266	243,968,997	250,856,520	259,996,044	263,540,430
Reserve fund	124,157,646	130,222,170	137,492,777	146,392,752	151,546,260
Loans	276,072,070	293,599,862	271,246,314	255,782,695	249,324,576
Deposits					
Number of societies investigated	11,290	11,617	11,812	12,094	12,437
Number of members	3,926,000	4,140,000	4,261,000	4,494,356	4,785,662
Amount of deposits	1,063,164,000	1,179,132,000	1,268,021,000	1,378,319,128	1,514,897,044
Total amount of funds	1,703,119,000	1,846,923,000	1,927,617,000	2,040,491,000	2,179,308,000
Balance	9,683,000	11,693,000	9,312,000	8,275,000	9,256,000
Credit societies					
Number of societies investigated	11,290	11,617	11,812	12,094	12,437
Number of members	3,925,801	4,140,448	4,261,000	4,494,000	4,785,662
Deposits	1,063,163,980	1,179,131,995	1,268,021,000	1,378,319,000	1,514,897,044
Advances	1,017,632,665	1,017,521,313	1,014,445,000	1,033,334,000	1,047,878,130
Trading societies					
Number of societies investigated	8,477	9,529	10,293	11,057	11,859
Number of members	3,151,868	3,536,261	3,857,000	4,199,000	4,624,881
Total amount of sales (for the year)	202,838,620	261,398,919	313,210,000	376,746,000	478,316,112
Purchasing societies					
Number of societies investigated	10,086	10,721	11,155	11,664	12,116
Number of members	3,498,860	3,811,395	4,108,000	4,374,000	4,879,540
Total amount of purchases (for the year)	129,110,813	155,991,976	196,126,000	249,296,000	281,541,238
Utilization societies					
Number of societies investigated	5,647	7,158	8,213	9,300	10,484
Number of members	2,281,068	2,835,943	3,308,000	3,822,000	4,378,065
Total amount of charges for utilization (for year)	5,731,098	6,816,995	8,054,000	9,465,000	10,948,498

Village Cereal Warehouses At the time of the great crop failure which resulted from the unseasonably cold weather in the Tohoku or North-Eastern District in 1934, the Imperial House granted a large sum of money, in November of that same year, for instituting

some permanent system of mutual relief and rehabilitation for the farmers in the district.

Accordingly the Government, in order to comply with the Imperial wishes, decided upon establishing and popularizing 'Go-Kura' or village warehouses

for storing cereals against emergencies in those parts. It distributed an aggregate sum of Yen 1,636,800 for the 1934 and 1935 financial years to the prefectures in the district, where 1209 old cereal warehouses were enlarged and renovated and as many as 4,921 new ones established, making a total of 6,130 at the end of March, 1936.

A warehouse association has been

formed in each village and each farmer-member of the association is required to store his crop of any particular year by the end of December. The aim is to complete full stocks of cereals in about five years. There are many villages where special community farms for the purpose are cultivated either by members themselves or by tenants.

NUMBER OF VILLAGE WAREHOUSES

	Total	Owners		Capacity	
		Public bodies	Federation	For cereals	For cocoons
1933	6,416	6,348	68	20,716,000 (bales)	3,841,000 (kan)
1934	6,834	6,724	110	23,540,000 ..	4,182,000 ..
1935	7,939	7,779	160	27,992,000 ..	4,107,000 ..
1936	8,513	8,304	209	30,430,000 ..	4,541,000 ..
1937	8,811	8,518	293	31,712,958 ..	4,352,784 ..

Education of Farmers

At the end of 1937 the number of farmers educated on subjects relative to farming was 5,761,217, an increase of 178,879 or 3 per cent over the previous year. The results of investigation on their school education were as follows:

	Number	Percentage
Total number of farmers investigated	5,761,217	100.00
Educated in schools	4,374,391	75.93
Elementary	4,003,721	69.49
Middle	355,282	6.17
Higher	11,462	0.20
University	2,926	0.07
Educated in Agricultural Lecture Halls	1,386,826	24.07

Agriculture in 1938 and 1939

Law for Agrarian Adjustment Conditions of farming villages naturally differ according to localities, especially in regard to farm earnings, making it difficult to provide generalized and summarized rules governing detailed conditions in different farm villages. The provisions of the Law are confined to matters fundamental and common to different localities, leaving matters of detail to the commissions on farm land which are to be created in cities, towns, villages and prefectures and to a system of arbitration. These commissions and the arbitration system are to function, with mutual concessions and cooperation among the persons concerned, to adopt and carry out concrete and appropriate measures in strict consonance with actual conditions

of the respective localities, for the adjustment of affairs related to farm land.

The principal points in the Law for Agrarian Adjustment, enacted in 1938, may be listed as follows:

First, the Law provides for a system under which cities, towns, villages or other appropriate public organizations may, on request, manage, protect or utilize farm land in behalf of farmers who, because of military service or other reasons, are unable to till or manage their own land or leased land. Or, these organizations may buy up such land and dispose of it in line with the purpose of creating independent farmers and other principles governing the plans for the adjustment of farm land.

Secondly, the Law provides that, when prefectures, cities, towns, villages or other appropriate organizations attempt to acquire or use land necessary for the purposes of creating independent farmers, or of possessing it for lending, with a view to attaining economic recovery of farming villages, they may negotiate, on approval by the competent administrative authorities, with owners of such land or those who possess the real rights over it, regarding transfer of the land or setting up of rights over earnings from the land. In case such negotiations fail to bring about an agreement, they may ask for legal arbitration. Furthermore, in case the above-mentioned organizations attempt to exploit undeveloped land, such land may be acquired for them by applying the Law of Expropriation of Land, after negotiations with the owners have failed.

Again, in view of the necessity of preventing tenant disputes and other

undesirable developments arising out of the consolidation or disposal of land for the economic recovery of farm villages, the proposed Law provides that the competent administrative authorities, in case of necessity, may cause cities, towns, villages or other organizations to announce their plans in advance to the Commissions on Farm Land of their respective localities, so that the latter may have an opportunity of creating independent farmers or of making other feasible arrangements.

Thirdly, with respect to independent farm land created or maintained by Government subsidy or other aid, it is so provided that sales or transfer of the land and setting up of the real rights on it by the owner shall be legally invalid, unless approval has been given by the authorities, and the owner shall be required to register the land strictly in line with this particular provision. This arrangement serves to enable the land owner to protect himself against a third party regarding the land.

Fourthly, the Law provides the following means of insuring and stabilizing the livelihood of tenant farmers:

(1) Contract for lease of farm land entered into between two parties shall be valid against a third party even if such a contract is not registered. Hence, the contract of the lease shall not be affected by transfer of the ownership of the land due to sale or other reasons, or by mortgage rights or real rights that may be set up.

(2) The land owner may not cancel a contract of lease of that land without consent of the lessee or refuse to renew the contract at its expiry, except in cases when the lessee without good reason defaults in payment of the rent or commits perfidious acts, or when the land owner becomes obliged to cultivate the land himself or to use the land for building dwelling houses or for other justifiable purposes, or when the land owner, for good reasons, becomes unable to continue to keep the land under tenancy.

(3) When a contracting party intends to cancel the lease of the farm land or to refuse the renewal of it, he shall be required to notify the other contracting party of such intention six months or one year in advance. At the same time he shall notify the Commission on Farm Land of the respective city, town or village so that the matter may be arranged as smoothly as possible.

Even in normal times it is necessary to settle tenant disputes rationally and as swiftly as possible in accordance with

actual conditions, but this is especially true in this time of emergency. The Law, therefore, provides the following measures:

(1) Officials in charge of tenant disputes shall be authorized to place disputes under arbitration in accordance with the Tenancy Arbitration Law whenever such action is deemed necessary for the public welfare. Law courts shall also be authorized to place under arbitration any judicial case relating to tenant farms.

(2) When the Court deems arbitration necessary, it may, after consulting the officials in charge of tenant disputes, issue orders requiring the parties involved to keep the crops on the disputed land unchanged or keep the land rentals in custody, or issue orders regarding cultivation of the land during the period of negotiation so that the arbitration may be successfully concluded.

(3) In case arbitration of a tenant dispute fails, the Court may, after due consideration based strictly on the actual circumstances and after consulting the officials in charge of tenant disputes and the commission on farm land, resort to juridical proceedings in order to achieve a fair solution of the dispute.

Fifthly, the Law also provides for the settlement of agrarian disputes other than those relating to tenancy. In regard to the utilization of farm land other than tenant farms, disputes may arise in connection with relations with adjoining land. It is necessary to settle such disputes rationally, smoothly, swiftly and in a simple manner on the basis of the actual conditions. For such purposes, the proposed Law provides for a system under which the commission on farm land may adjust matters as in cases of tenant land disputes while the Courts shall also be authorized to arbitrate the disputes according to the methods applied to tenant land.

Sixthly, the Law provides for the establishment in different cities, towns, villages and prefectures, of commissions on farm land, which, in addition to the affairs referred to above, shall deal with matters connected with the creation and maintenance of independent farmers, exploitation of uncultivated land, transfer and consolidation of farm land, tenant relationships and various other questions relating to farm land, on the basis of local governmental conditions.

Production and Distribution of Rice As has been attested by experiences in

past wars, the sending of the agrarian population and farm horses to the front and the transference of much of the remaining rural labour power to munitions and related industries has caused shortage in such power; while the re-organization of national economy on a wartime basis has inevitably brought about an insufficient supply of chemical fertilizers and agricultural implements. Prices of these materials have consequently gone up. In such circumstances, agriculture has been greatly hampered. This effect has been especially great in Japanese farming villages whose inhabitants mostly depend on their own labour and manage petty farms with small amounts of money.

While production is threatened with decline owing to these adverse causes, the consumption of rice is disproportionately on the increase not only in Japan proper but also in overseas territories, evidently because of the boom in munitions industries and the growing demands of the fighting services. In the face of these difficulties, the agricultural industry in Japan is being called on to ensure a sufficient supply of its most important article of food.

To meet the requirements, therefore, the agricultural population has spared no effort to maintain and increase, where possible, productive power, coping with altered conditions, while the Government has given necessary aid through various measures. As a result, a balance of approximately 9 million koku of rice may be brought over to the next year, according to the estimated supply and demand for the 1939 rice year.

A mere maintenance of output, however, at the level prior to the present Affair is insufficient to meet the ever-increasing consumption. It is of paramount necessity, particularly during prolonged hostilities, to ensure as much supply of rice as possible by the improvement and promotion of agricultural productive power, for the purpose of smooth operation of wartime economy; hence the necessity of the carrying out of a national programme with increased production as the definite objective. This transition to planned production has to be effected not only in Japan proper but also in overseas territories. A broad plan for the purpose has already been started.

The 1939 plan for increased production of rice in Japan proper has the objective of producing approximately 87 million koku. Success in carrying out this plan will leave a satisfactory amount of surplus to be brought over to

the following rice year.

According to the plan, the total amount fixed as the objective shall be allotted to individual prefectures. Measures for the accomplishment of the aim include a proper distribution of fertilizers and other productive materials, the shifting and readjustment of labour, the establishment of the Commission for Production Planning in each prefecture, county, city, town or village, the function of which is to make investigation of and decisions on the standards of selection and improvement of species of rice, both paddy and upland, adaptable to each district, to encourage the operation of the fixed plan, to promote the cultivation of seedlings of paddy rice, and to effect the prevention of damages by noxious insects.

For general guidance there have been organized the Corps for Guiding and Promoting Production composed of officials in the Department of Agriculture and Forestry. These corps are sent to all the districts to lead local Commissions in the task of carrying out the programme, of encouraging local campaigns and movements for such purposes, and of giving practical guidance and courses and lectures on related subjects.

However, for the successful execution of the expansion plan under the current emergency in agrarian communities that are confronted with changing conditions of production, the first requisite is to effect rationalization of farm management, which is generally small-scaled and based on family labour. From this point of view, co-operative labour with the community as a unit is encouraged. In certain districts, farmers have already overcome their difficulties by the adoption of new co-operative farming methods, while the common use of agricultural machines and implements, in particular, that of the motor tiller which was thought unadoptable on small-scale farms such as those in Japan, has been considered as a practical question for the purpose of increasing productivity.

As governmental measures for control of rice in the realm of exchange, there have been in force the Rice Control Law and a set of regulations based thereon, the main objective of which has been to empower the authorities to purchase or deliver rice with official prices or to control its disposal in certain seasons by official operations so as to keep prices within the limits of the maximum and minimum prices fixed by the law. To date, these measures have operated satisfactorily. For the thor-

oughgoing execution of the rice policy, however, systematization of the process and structure of exchange is now called for.

Since producers of rice are spread over the length and breadth of Japan, managing small-scale farms under the family labour system, this particular commodity is shipped out to the market through innumerable channels from the outset of the process of its circulation. It may fall first into the hands of brokers on the spot or merchants who buy rice from the farmers only to sell it to second traders, or it may be put on common sale through the farmers' co-operative sales societies and agricultural warehouses, and then go through still more complicated courses. Thus, producers and their organizations, traders and their organizations, rice exchanges and rice markets—all of them demand their share of profit according to their own calculations.

The Government had been fully aware of the necessity of reform of the existing rice distribution mechanism, and in July, 1937, it appointed the Commission for Investigation of a new Rice Distribution System. The Commission, after thoroughgoing studies of various aspects of the question for the purpose of rational improvement of existing conditions, succeeded in drafting a Bill which was approved by the 74th Diet, and which was promulgated on April 11th, 1939, as the Rice Distribution Control Law.

The purpose of the new legislation is to keep the price of rice at a reasonable point by controlling its distribution. To accomplish this aim, the existing rice exchanges will be reorganized according to its provisions. Speculation in rice exchange quickly reflects itself in the actual price of rice. This is especially the case in time of emergency when speculation gives rise to other speculation and actual prices soar under no pressure of real demand. Then, cornering or holding of rice naturally follows, with the result that the blind hunting for greater gains of profit dislocates the social function of rice exchanges as distributing agencies. In view of these disastrous social consequences and with a view to checking speculative transactions as much as possible and to changing the exchange structure to spot transactions based on supply and demand relations, the new Law provides for the establishment of a semi-official company, under the name of the Japan Rice Company, Limited, which will be invested in by the

Government and all the rice interests.

All the rice markets in Japan proper will be monopolized by the new corporation which takes the place of the existing rice exchanges and spot rice markets. Speculation in transactions in rice at the new rice markets will be strictly prohibited, at which only spot transactions on actual demands will be allowed within the limits of the maximum and minimum official prices as stipulated in the Rice Control Law; any break of these stipulations shall be interdicted. By the operation of the new law, the rice policy will become strengthened and thus be much more effective in checking abnormal rise and fall in the prices of rice, in stabilizing and normalizing prices and in ensuring smooth distribution.

With regard to the rice markets to be operated by the new company, they will be established in all the places which have been recognized as important rice distributing centres, especially in the towns where rice exchanges or spot markets are already extant, with a view to making transactions in the new markets function as the centres of all rice transactions.

The nerve-centres of the rice distribution structure will thus be created. However, for the systematization of the process of exchange, the regulation of the nerve-ends should not be neglected. The Law provides, therefore, that the brokers and dealers in rice shall be placed gradually under a licensed system, beginning with localities where such a step is deemed necessary in order to control and, at the same time, protect or improve them in conformity with the main purpose of the legislation. The Law further authorizes the competent authorities to give the traders in rice or their agents orders necessary for the effective control of rice distribution, so that the limitation of sales prices, prohibition of forestalling or holding may be effected for the purpose of ensuring adequate prices and smooth distribution.

Readjustment of Rural Debts Measures for readjusting and refinancing rural debts in Japan have been functioning since August 1, 1933, when the Law Relating to the Rural Debts Readjustment Association came in force.

According to an investigation conducted by the Department of Finance in 1912, two years before the World War, rural debts in Japan totalled some ¥750,000,000. Of that amount some 40 per cent represented individual loans

and some 20 per cent those of money lenders while 65 per cent were high-interest loans of 10 per cent and more. This shows that members of the rural population have unavoidably resorted to irrational methods of financing and consequently have suffered from the terms most unfavourable to themselves. This condition of rural debts, however, underwent a remarkable change with the outbreak of the World War which caused the national economic system of Japan to develop rapidly and her rural economic system to expand suddenly. This economic expansion, significant as it was, resulted in an accelerated increase in the amount of rural debts.

Then came the world-wide depression and the derivative panic in agriculture, following the close of the War. This slump, unprecedented in scope and intensity, broke down the economic life of Japan's rural population, leaving in consequence a huge amount of accumulated debts, estimated at between ¥5,000,000,000 and ¥6,000,000,000. Unquestionably, such a burden constitutes the cancer which not merely prevents the growth of the rural economic system but saps its strength.

Causes for accumulation of this stupendous debt may not be attributed only to the war boom and to the post-war slump; there have been major and minor causes and circumstances contributing in various ways and degrees to the creation of such a state of affairs. In order to plan for the prevention of further accumulation of debts, it is necessary that those causes and circumstances should be studied and analyzed and that preventive measures such as price policy directed at essential agricultural, forestry and aquatic products, adjustment of farm land, prevention of calamities, improvement of financial and medical facilities, and initiation of the insurance system should be carefully planned and efficiently carried out. As an immediate measure, however, the chronic cancer in Japanese agricultural economy must be operated on.

The Law Relating to the Rural Debts Readjustment Association is designed to encourage the organization of debt-readjustment associations on the basis of the principles of neighbourliness and mutual help, with a view to readjusting rural debts by carrying out plans for repayment of debts and economic regeneration worked out by the associations. The Law is not designed merely to give aid to debtors nor merely to protect creditors but to assist those who earnestly and sincerely strive

to achieve economic regeneration. Creditors are therefore called upon to cooperate by making certain sacrifices and moderating original terms, in sympathetic consideration of the debtors' unfortunate circumstances, in appreciation of their sincerity, and above all in view of national purposes to reconstruct and strengthen rural communities.

Organization of the association on the geographical basis of a community where economic and other phases of everyday life are coherently interwoven is the step essential for maintaining the above-stated genius of the institution. The system of compensation for losses in connection with the special financing of the readjustment funds is a governmental measure for facilitating the operation of the undertaking. By this system the Government as well as municipalities are to share in bearing the losses which may be incurred. The Government is also providing funds at low interest for the undertaking.

A few years of operation of the Law Relating to the Rural Debts Readjustment Association showed that to employ municipalities alone as organs for financing funds was not meeting the actual needs of rural communities. The Law was therefore revised in part in 1937 and separate legislation concerning special financing of the readjustment of funds and compensation for losses was instituted. As a result, the Central Chest for Cooperative Societies, financing banks such as the Hypothec Bank of Japan, Agricultural and Industrial Banks, and the Hokkaido Colonial Bank have been designated, besides municipalities, as special financing organs. At the same time, the raising of the maximum amount to the individual beneficiary to between ¥3,000 and ¥5,000 and other improvements have been made in accordance with actual conditions in rural communities.

The revised and enlarged system, which has been in force since December 1, 1937, authorized the establishment of debt-readjustment associations, or judicial persons engaged in the undertaking of readjusting debts, for the period from the above date to November 30, 1947. Thus, it is designed that plans be worked out and carried out for readjusting debts amounting to ¥1,300,000,000 which have been contracted on irrational terms. With regard to subsidy for covering and indemnity against the losses the Government is authorized to disburse up to ¥120,000,000.

According to the data received up to

June 30, 1938, the number of cities, towns and villages where debt-readjustment associations have been established amounted to 2,514; that of the associations, 7,072 (of which 5,130 are of unlimited liability, 1,933 of reserve liability, and 9 credit cooperatives functioning as substitutes); and that of members, 220,000. Furthermore, the associations that have already completed planning for repayment of debts and for economic regeneration with the funds financed through municipalities numbered 3,614, and the funds already supplied amounted approximately to ¥34,000,000, which has been supplied from the Government low interest funds. There were also six or seven associations that had been supplied with funds through the Central Chest for Cooperative Societies. These funds amounted approximately to ¥500,000. Financing through financing banks was started in 1938.

Another measure adopted to promote the economic reconstruction of rural communities is the Law for the Temporary Settlement of Rural Debts which has been in force since June 20, 1938. This is an emergency law facilitating settlement of debts and realization of economic regeneration on behalf of families of soldiers killed or wounded in the China Affair. Although this emergency measure is closely related to that for the readjustment of rural debts in general, it does not necessarily require the establishment of debt-readjustment associations as in the case of the other measure. In view of the purpose for which this emergency step has been taken, the new legislation provides that the moderating of terms of contracts of debts, the forming of set-

tlement plans and other matters necessary for the economic regeneration of debtors shall be taken care of by Temporary Debt Settlement Commissions to be created by prefectures. With regard to subsidy for covering and indemnity against losses, their percentages are to be twice as large as those of the ordinary rural debts readjustment system.

According to an investigation conducted by the Bureau of Economic Regeneration, Department of Agriculture and Forestry, the debts contracted by middle- and small-scale farmers amounted, at the end of August, 1935, approximately to ¥4,100,000,000. Of these debts 30 per cent represents those contracted at the interest of 10 per cent or more. Thus they are disbursing a fabulous amount as interest on their debts, an amount of money exceeding the ¥300,000,000 which is being spent annually on chemical fertilizers by the whole agricultural population.

Temporary Planning Bureau In view of the urgent need of securing adequate supplies of the principal farm, forest and marine products, an Imperial Ordinance was issued on December 3, 1938, to provide for the creation in the Department of Agriculture and Forestry of a Temporary Planning Bureau, the duty of which is to formulate plans for the maintenance and expansion of agricultural industries, to attend to the supply of such goods as are needed in conducting those industries and to attend to the adjustment of labour. The Vice-Minister of the Department of Agriculture and Forestry will be ex officio chief of the Bureau and under him will be 3 secretaries, 2 technical experts, and 10 clerks.

CHAPTER XIV

SERICULTURE AND RAW SILK

Sericulture

History

Historical records show that the raising of silkworms has been practised in Japan for more than two thousand years. It is surmised that the industry was first introduced into the country from Chosen or China, but for sometime it made but slow development, as the work was almost exclusively in the hands of the naturalized Koreans and Chinese. Following the introduction of Buddhism, and with the advance of civilization, the demand for silk gradually increased and the industry spread among Japanese farm households. After that, sericulture made steady growth until about 1,100 years ago, when, at the time of the Emperor Kammu, it made a sudden spurt and spread over half the Japan proper of those days, and in less than another century most of the remaining half of the country was engaged in silk production. Recent development made in the industry is outlined in the following table, showing

the cocoon output for the past half a century.

Year	(In 1,000 kwan)	Index number
1880-1884	12,223	100
1885-1889	11,147	91
1890-1894	15,436	123
1895-1899	24,608	201
1900-1904	26,484	217
1905-1909	32,622	267
1910-1914	43,184	353
1915-1919	61,561	504
1920-1924	64,877	530
1925-1929	91,668	749
1930	106,469	871
1931	94,072	769
1932	89,550	732
1933	101,247	828
1934	87,199	713
1935	82,067	671
1936	82,892	675
1937	85,972	703
1938	75,256	615

The recent condition in the sericultural industry in Japan proper can roughly be explained as follows:

	1934	1935	1936	1937	1938
Number of agrarian families	5,617,486	5,610,607	5,597,465	5,574,879	—
Number of cocoon raising families	1,995,492	1,894,647	1,856,551	1,818,552	1,697,123
Percentage of cocoon raising families	35.5	33.7	33.1	32.6	—
Mulberry plantation area (chobu)	622,998	582,337	566,231	561,072	549,200
Egg-cards brushed (gramme)	160,829,333	151,176,726	145,651,630	143,839,117	128,071,425
Quantity of cocoon yield (1,000 kwan)	87,140	82,066	82,892	85,972	75,243
Value of cocoon yield (1,000 yen)	203,871	350,860	336,641	419,609	345,965

Cocoon-raising Industry

According to the Ministry of Agriculture and Forestry statistics the raisers of silkworm cocoons numbered 1,697,123 in 1938. The number of these cocoon raising houses decreased by 121,429 or 6.7 per cent, from that for the previous year.

The quantity of cocoons produced in 1938 totalled 75,243,647 kwan and the

value was estimated at ¥345,965,329 consisting of 40,863,284 kwan of spring cocoons valued at ¥177,477,319 and summer and autumn cocoons of 34,380,363 kwan valued at ¥168,488,010.

Egg-cards brushed during 1938 amounted to 128,071,425 grammes, falling 15,767,692 grammes, or 11.0 per cent, from 1937. As regards the cocoon production, the amount and value decreased by 10,728,716 kwan, or 12.5 per cent,

and lost ¥73,644,412 or 17.6 per cent, in comparison with the year before.

Control of Egg-cards Production In view of the severe competition with rayon silk in recent years there is a sheer necessity of improvement in silk industry so as to produce silk of a more superior quality with a lower cost of production, and the question of better egg-cards comes first of all. There was no control of the preparation of egg-cards hitherto all the matter being altogether left to the hands of merchants. For long the request for an effective control on the egg-cards production by the authorities has been raised among the farmers and silk producers. Consequently, the National Original Silkworm Egg-card Control Law was promulgated in 1934. The purpose of the Law is to realize a thorough control of egg-card production by 1938 and cut down the excessive number of different kinds and squeeze out the best ten by a special committee which is to be organized by the Imperial

ordinance. The original egg-cards of the best kinds thus selected and sanctioned by the Ministry of Agriculture and Forestry shall be sent to local governments where they are multiplied and distributed among sericulturists. Private establishments may reproduce egg-cards out of the original ones, but the percentage is limited to 30% against the 70% of local governments' production. The price shall be fixed by the Imperial ordinance. The local governments are granted a delay of 10 years for the completion of facilities, but, as a matter of fact the control will be completed without delay because most of local governments can immediately respond while the vacancy left by backward prefectures will be filled up by private concerns for the time being. Encouragement shall be given to an invention of better egg-cards by individuals so as to prevent the abuse of a too-strict governmental control. An annual profit of at least ¥100,000,000 is estimated at as the result of the control.

PRODUCTION OF SILKWORM EGGS

	(In kg.)				
	1933	1934	1935	1936	1937
Number of producers					
Total	5,344	4,924	4,346	3,827	3,512
Production					
Qualified by government test	289,185	288,940	256,522	213,891	235,501
Reproductive eggs					
Production					
Qualified by government test	9,360	9,369	8,616	7,235	6,989
Industrial eggs					
Production					
Qualified by government test	8,901	9,006	8,256	6,976	6,788
Production					
Qualified by government test	279,824	279,670	247,903	206,655	228,511
Qualified by government test	271,569	272,606	244,615	205,015	226,804

Mulberry Plantation The success of the silk-worm raising industry depends upon an adequate supply of suitable leaves on which to feed the worms.

In Japan there are as many as 276 varieties of mulberry tree, and from these, 71 are selected by local government authorities as model kinds, each having its own special characteristics.

The total mulberry plantation area at the end of June, 1937 was 561,072 chobu, representing a drop of 5,958 chobu or 0.9 per cent from 1937. This was due to progress of mulberry plantation readjustment all over the country. The number of mulberry saplings that were raised in 1937 counted 257,642,851 pieces valued at ¥4,300,028.

Cost According to the investigation made by the Imperial Farmers' Association, cost of spring production in 1938 was as follows:

COST OF COCOON PRODUCTION
(For 1 kwan of the first class cocoon)

Details	Spring Crop (In yen)
Mulberry leaves	2.42
Egg-card	0.24
Labour	1.70
Cocoonery room	0.20
Duties	0.16
Miscellaneous	0.39
Total	5.11

Educational Facilities There are in Japan three special colleges for the silk industry, namely, the Ueda Sanshi Semmon Gakko, Nagano prefecture; Tokyo Sanshi Gakko, Tokyo; and Kyoto Koto Sanshi Gakko, Kyoto; besides which, there are, in different parts of the country, 16 public schools of middle school grade. Some of the agricultural col-

leges and middle grade schools also have classes dealing with silk industrial enterprises. In addition to these regular seats of learning there is a class for the practical training of silk-raisers at every sericultural experimental station established by the Government in each silk producing district, and a similar training is also given at a score of private institutes created for the purpose of diffusing knowledge on all phases of the silk industry.

The Cocoon Market The Numazu cocoon market for 1938 opened on May 28 for the first spring cocoon transactions in Japan. Usually at the Numazu market yellow cocoons are dealt in, but at the Hamamatsu market which was opened on the 27th, white cocoons were transacted. Prices of white cocoons were the highest for the last four

years. High, low and average prices of the day, which formed the standard for the year's prices in this country, together with those for the preceding five years, were as follows:

		High	Low	Average
(In yen per kwan)				
1934	white	3.09	2.59	2.92
	yellow	3.28	2.00	2.66
1935	white	4.91	4.36	4.65
	yellow	5.11	4.23	4.65
1936	white	5.30	4.28	4.68
	yellow	5.29	4.51	4.94
1937	white	5.03	5.03	5.03
	yellow	6.28	5.20	5.93
1938	white	5.17	4.98	5.06
	yellow	4.96	4.38	4.61

The Statistics on cocoon production by kind in Japan proper in the past 6 years are given below:

COCOON PRODUCTION BY KIND IN 1932-1937

(Japan Proper)

		1932	1933	1934	1935	1936	1937
Total production							
Quantity	kg.	335,771,254	379,676,366	326,742,555	307,747,699	310,886,235	322,394,862
Value	yen	296,791,026	500,129,171	203,849,178	350,860,428	386,632,753	419,609,741
Cocoons							
Quantity	kg.	297,237,229	339,646,136	292,851,645	275,129,036	277,511,824	289,168,890
Value	yen	280,910,829	477,690,472	192,143,243	330,510,891	365,304,203	397,419,066
Douplions							
Quantity	kg.	23,317,849	23,602,789	19,018,003	17,725,294	17,943,860	17,410,628
Value	yen	10,117,560	13,165,266	7,056,560	11,702,573	11,597,767	11,505,307
Waste cocoons							
Quantity	kg.	15,216,178	16,427,441	14,874,907	14,893,369	15,430,811	15,815,344
Value	yen	5,702,637	9,273,433	4,649,375	8,646,964	9,738,822	10,685,368

Cocoon Deals

Cocoon Deals The Produced Cocoon Disposal Law was first enforced in 1937. The results were not satisfactory. Out of 67,902 kwan of cocoons transacted, only 120 kwan was delivered as dry cocoons. An expediency by which cocoons will be dried and delivered after purchase contracts are concluded was established. The Government overlooks it, considering the transitory period of the new practise. In Nagano prefecture the dry cocoon transactions were totally ignored and this caused a great trouble among cocoon raisers. Reelers are raising a protest against this system. The greatest dissatisfaction is with cocoon drying technique by a third party. The technique is said to damage the quality of raw silk and interfere with reeling operation. Another complaint is, since the quality

of cocoons differs according to places of production, climate and species, a uniform drying method is not suitable. Cost of drying makes the price higher and this is still another complaint. If the drying method is conducted by themselves, this will not damage the quality of cocoons and the cost also will be cheaper. The distribution by dry cocoon distribution guilds will make the cost of silk reeling higher. Sericulturists, too, are against the system. The reason is cocoon prices fluctuate with a change of silk price, but to keep dry cocoons for a certain period without selling them as raw cocoons will cause sericulturists uneasiness over future cocoon price. Economic condition of sericulturists does not allow them to keep cocoons for a long time. They need ready cash. Dry cocoon expenses are now shifted to sericulturists under

the law. The law thus met a severe opposition in the first year of enforcement, but with the lapse of time it is believed to be followed by all.

AVERAGE COCOON PRICE IN JAPAN PROPER PER KWAN (In yen)

	Spring Cocoon	Summer-Autumn Cocoon	Average
1925	11.25	10.07	10.68
1926	9.28	7.33	8.35
1927	7.18	4.77	6.03

	Spring Cocoon	Summer-Autumn Cocoon	Average
1928	6.86	6.02	6.48
1929	7.57	6.53	7.06
1930	4.00	2.04	3.10
1931	3.08	2.96	3.03
1932	2.54	4.70	3.53
1933	6.25	4.27	5.28
1934	2.52	2.38	2.45
1935	3.82	5.37	4.50
1936	5.06	4.81	4.94
1937	5.55	4.13	4.88
1938	4.26	4.93	4.60

Raw Silk

Soon after the country's entry into foreign trade, the Tokugawa Shogunate put a restraint on the exportation of silk on the ground of its scarcity and of its being a prized national production. Notwithstanding such a restrictive policy raw silk exports from Yokohama increased by leaps and bounds, as enormous profits could be made by the exporters.

With the Restoration came the encouragement of home industries, the first among them to arrest the attention of the Government authorities being the silk industry, and ever since special efforts have been made toward developing this national industry. Unfettered financial help was extended to filatures in 1915, 1920, and again in 1930, and the Government has established facilities for the promotion of all phases of silk activities, schools, silk conditioning houses and various experimental stations.

The silk reeling and sericultural industry is represented by Nagano prefecture. Suwa is located in the central part of the prefecture and Okaya (Hirano Village) in Suwa district is the most thriving and largest silk reeling centre. No other silk reeling district in the world can rival it, since Japan produces two-thirds of the world's entire silk production, and silk production in Nagano takes the foremost rank in Japan. Gumma prefecture is the next largest reeling centre with Fukushima, Aichi, Saitama, Gifu and Kyoto following.

Raw Silk in 1937

The raw silk industry in 1937 traced a stormy course on account of the business depression in America and the wartime control of commodities in Japan, although a hopeful atmosphere prevailed at the beginning of the year. The price of raw silk in the middle

of January went up to ¥947.00 per picul reflecting the rising tendency of prices in the world and speculative purchases. In May, however, the price fell below ¥700.00, but with the beginning of the new silk year (July to June the following year) the price picked up again and in the beginning of July it had neared the ¥900 mark when the North China Incident occurred. The Sino-Japanese conflict and the delicate political situation in Europe greatly discouraged the raw silk markets and in November the raw silk price was put at its cheapest since June, 1936. Toward the end of the year it regained somewhat, but the cost of production had increased in the meanwhile so that the profit margin had become very slender.

Enactment of the Raw Silk Price Stabilization Law An epoch-making event in the annals of raw silk industry and trade was the promulgation of the Raw Silk Price Stabilization Law which came into force on April 1, 1937. The purpose of the law is to fix the maximum and minimum prices of raw silk in order to regulate the ups and downs in prices for the stabilization of the business. It is the last and most effective measure of all the measures employed in the past. By the proper application of the provisions of the law the future of raw silk industry and trade bids fair to become brighter. The standard price of purchase by the Government from the association of silk dealers specially organized in accordance with the provisions of the law was fixed at ¥520.00 per picul and that of sale by the Government to the association at ¥950.00 for the silk year, July 1937 to June 1938.

Production and Exports The production of raw silk of all kinds in 1936

amounted to 11,287,000 kan valued at ¥517,244,000, showing a decrease of 356,000 kan and an increase of ¥17,477,000 as compared with the previous year. The exports during the silk year, July 1936 to June 1937, amounted 525,027 piculs valued at ¥429,768,000, recording an increase of 37,768 piculs and ¥51,662,000 over the previous silk year. Shipments during the 1937 calendar year amounted to ¥407,118,000 as against ¥392,809,000 in 1936, an increase of ¥14,309,000 or 3.6 per cent.

Silk Filatures

Silk Filatures The number of Japanese silk filatures has kept falling for many years, except in 1930. The 1937 number, however, increased 3.7 per cent to 43,422 over 1936. The Government was giving subsidy to filatures for encouragement of scrapping of surplus basins in accordance with the silk reeling industry law. Thus, readjustment of medium-sized filatures made headway. Division of this number for 1937 according to

the number of basins used were as follows:

Those using less than		Drop from 1935
10 basins	41,408	(+)2,051
10-50	906	326
50-100	478	158
100-300	479	33
Over 300	151	3

Of the total, filature-using machines were 1,892, re-reeling filatures were 37,418 and dupion filatures 4,112. The total number of basins for 1937 was 255,115, falling 8.8 per cent from the year before.

The number of female operatives totalled 273,026, falling 7.9 per cent from 1936 and that of male operatives 22,122, decreasing 7.5 per cent. Production of raw silk totalled 11,166,553 kwan, falling 1.1 per cent from 1936, worth ¥527,320,631 gaining 1.9 per cent. Production of silk waste totalled 3,234,206 kwan, declining 5.7 per cent from 1936, worth ¥21,484,365, declining 0.8 per cent.

NUMBER OF FILATURES, BASINS AND OPERATIVES

(Silk Bureau, Ministry of Agriculture and Forestry)

Year	Establishments	Filature Worked by Machinery	Basins	Operatives
1919	234,992	4,311	610,032	—
1924	196,929	3,674	523,582	546,813
1926	91,751	3,768	428,174	488,342
1927	83,469	3,787	425,595	496,230
1928	76,090	3,509	435,735	515,504
1929	69,417	3,719	437,738	525,307
1930	70,728	3,759	433,637	509,124
1931	66,400	3,687	418,402	495,449
1932	60,461	3,356	365,417	428,763
1933	54,397	3,218	343,579	395,027
1934	51,168	3,013	321,040	362,510
1935	45,703	2,708	297,657	347,513
1936	41,892	2,468	280,692	320,496
1937	43,422	1,892	255,115	295,148

SILK PRODUCTION

(Silk Bureau, Ministry of Agriculture and Forestry)

Year	Total Output		White silk		Yellow silk	
	volume (kwan)	value ¥	volume (kwan)	value ¥	volume (kwan)	value ¥
1924	7,577,170	837,230,677	6,158,148	673,368,557	1,419,022	163,862,124
1925	8,284,317	956,052,187	6,822,065	784,720,379	1,462,252	171,331,808
1926	9,101,310	850,751,982	7,151,726	667,505,253	1,949,584	183,246,729
1927	9,880,306	798,798,455	7,800,821	629,005,493	2,079,485	169,782,962
1928	10,584,232	835,467,904	7,760,865	615,721,117	2,823,367	219,746,787
1929	11,292,399	857,577,692	8,246,583	624,955,155	3,045,816	232,622,537
1930	11,365,026	536,663,848	8,097,133	384,978,584	3,267,893	151,685,264
1931	11,682,814	427,690,988	8,036,360	295,289,433	3,646,454	132,401,555
1932	11,090,711	454,457,838	7,805,617	320,777,178	3,285,094	133,680,660

Year	Total Output		White silk		Yellow silk	
	volume (kwan)	value ¥	volume (kwan)	value ¥	volume (kwan)	value ¥
1933	11,242,816	497,740,808	8,429,370	370,840,406	2,813,446	126,900,342
1934	12,064,894	398,369,167	8,785,013	294,268,393	3,279,881	104,100,774
1935	11,662,048	500,052,421	9,154,361	399,560,673	2,507,687	100,491,748
1936	11,287,329	517,246,143	9,621,836	442,153,148	1,665,493	75,092,995
1937	11,166,553	527,320,631	9,648,493	458,437,242	1,518,060	68,883,389

TOTAL PRODUCTION BY RAW SILK FACTORIES

	1932	1933	1934	1935	1936	1937
Grand total						
Number of establishments	60,461	54,397	51,168	45,703	41,892	43,422
Number of boiling basins	365,417	343,579	321,040	297,657	280,692	256,115
Number of operatives	428,763	395,027	362,510	347,522	320,96	295,148
Male	30,120	28,055	27,450	26,175	23,922	22,122
Female	398,643	366,972	335,060	321,347	296,574	273,026
Production (Value)						
yen	472,324,428	517,054,010	417,414,865	522,606,348	538,558,343	548,804,996
Raw silk						
Qt.	kg. 41,590,166	42,160,560	45,243,354	43,609,788	42,303,465	41,874,574
Val.	yen 454,457,838	497,740,808	398,369,167	500,052,421	517,246,143	527,320,631
Waste						
Qt.	kg. 13,558,605	13,988,562	15,053,644	14,890,661	12,864,162	12,128,273
Val.	yen 17,866,590	19,313,202	19,045,698	22,553,927	21,312,200	21,484,365

Japan's Place in World's Silk Industry

According to the investigation made by the Silk Bureau of the Agriculture and Forestry Ministry the total world production in 1935 was 59,466,000 kilogrammes of which Japan (Korea and Formosa included) produced 45,520,000 kg. The 1936 world production totalled 59,425,000 kilogrammes of which

Japan produced 44,198,000 kilogrammes. China with 9,409,000 kilogrammes produced the largest quantity next to Japan. Then came Italy with 3,100,000 kilogrammes. Compared with 1923, the gain made during the 10 years was 18,145,000 kilogrammes. Detailed figures of the statistics prepared at the Silk Bureau of the Agriculture and Forestry Ministry follow:

RAW SILK PRODUCTION IN THE WORLD

(In 1,000 kilogrammes)

Year	Total	Japan	India & Indo-China	China	Eastern Europe, Near East and Central Asia	Spain	Italy	France	Brazil
1924	52,670	28,666	80	17,144	1,095	95	5,255	335	—
1925	57,138	31,485	90	19,678	1,145	100	4,380	260	—
1926	59,485	34,677	120	19,433	1,070	90	3,855	240	—
1927	63,211	37,782	140	19,244	1,040	83	4,627	295	—
1928	67,430	40,582	110	20,478	1,140	79	4,836	205	—
1929	70,630	43,403	60	20,722	1,350	74	4,826	195	—
1930	68,330	43,943	20	18,067	1,220	58	4,882	140	—
1931	57,718	45,244	10	8,244	810	44	3,286	80	—
1932	56,984	42,114	—	9,524	706	42	3,520	78	—
1933	57,001	43,757	—	8,876	854	38	3,400	76	—
1934	57,558	43,370	—	6,316	930	30	2,836	77	—
1935	59,466	45,520	—	9,829	2,281	34	1,700	52	50
1936	59,425	44,198	—	9,409	2,575	40	3,100	53	50

Silk in Japan's Foreign Trade

Exports of raw silk for 1938 totalled 477,471 piculs, including dupion, valued at ¥364,124,000. While the amount increased by 4,101 piculs from the 1937 exports, the value decreased by ¥42,894,000. The United States, as usual, made the bulk of purchases taking 393,274 piculs. Europe followed with 65,562 piculs. In the last 10 years the export quantity has not made any great change but the export value fluctuated widely.

SILK AND TOTAL EXPORTS
COMPARED

(Unit: ¥1,000)

Value of All Value of Percentage
Exports Silk Exports of Silk

(Japan Proper)

Year	Value of All Exports	Value of Silk Exports	Percentage of Silk Exports
1912	526,982	150,321	28.5
1913	632,460	188,917	29.9
1914	591,101	161,797	16.3
1915	708,307	152,031	21.5
1916	1,127,468	267,037	23.7
1917	1,603,005	355,155	22.2
1918	1,962,101	370,337	18.9
1919	2,098,872	623,619	29.7
1920	1,948,395	382,717	19.3
1921	1,252,828	417,124	33.3
1922	1,637,452	670,048	40.9
1923	1,447,751	556,169	39.1
1924	1,807,035	685,366	37.9
1925	2,305,590	879,657	28.2
1926	2,044,728	734,052	35.9
1927	1,992,317	742,266	37.3
1928	1,971,955	733,436	37.2

WORLD MARKETS FOR JAPANESE SILK

(Compiled by the Ministry of Commerce and Industry)

(Unit: ¥1,000)

	1933	1934	1935	1936	1937	1938	
						Quantity (In picul)	Amount (In ¥1,000)
United States	355,805	239,568	328,910	333,949	325,225	393,274	297,882
Great Britain	14,654	14,237	21,450	23,628	31,430	33,609	26,175
France	15,378	20,333	23,764	21,772	26,111	31,308	24,631
Australia	3,297	4,017	4,232	5,231	8,132	7,840	6,461
Canada	208	411	70	823	727	295	278
British India	—	—	—	—	5,534	2,358	1,520
Total including others	390,901	286,793	367,032	392,809	407,118	477,471	364,124

Value of All Value of Percentage
Exports Silk Exports of Silk

(Japan Proper)

Year	Value of All Exports	Value of Silk Exports	Percentage of Silk Exports
1929	2,146,619	784,150	36.5
1930	1,469,852	419,107	28.5
1931	1,146,981	355,394	31.0
1932	1,409,992	382,265	27.8
1933	1,861,045	390,901	21.0
1934	2,171,924	286,793	13.2
1935	2,499,073	387,032	15.4
1936	2,692,976	392,809	14.5
1937	3,175,418	407,118	12.9
1938	2,689,677	364,124	13.5

As regards the quantity, it is rather on the increase compared with 10 years or so ago. In 1923 the exports were figured at 263,280 piculs and for the following 3 years the quantity of the annual shipment never exceeded 450,000 piculs in contrast to 497,485 piculs for 1933. But this quantity for 1933 was smaller than that for any single year between 1928 and 1932. In 1934 it regained the former level, realizing a quantity next to none other than 1931 figure, and the tendency continued in 1935. But figures went down for the two years, 1936 and 1937, and in 1938 showed a slight increase. Below is given the quantity of silk exported each year for the 12 years ending 1937:

Year	Quantity of Silk Exported (picul)	Year	Quantity of Silk Exported (picul)
1927	521,773	1933	497,485
1928	549,256	1934	551,308
1929	680,950	1935	553,156
1930	477,322	1936	505,550
1931	560,577	1937	476,360
1932	548,541	1938	477,471

SILK EXPORTS TO THE UNITED STATES

(Unit: picul 133 lbs.)

Year	Export Volume	Index Number	Rate of Increase or Decrease against Previous Year (%)	Year	Export Volume	Index Number	Rate of Increase or Decrease against Previous Year (%)
1921	247,672	100.0		1933	437,624	176.7	(-) 14.7
1923	201,938	81.5	(-) 35.4	1934	433,537	175.0	(-) 0.9
1924	335,596	135.5	(+) 66.2	1935	466,566	188.3	(+) 7.6
1925	422,984	170.8	(+) 26.0	1936	428,209	173.6	(-) 8.3
1926	427,621	172.7	(+) 1.1	1937	380,175	153.5	(-) 11.2
1927	491,078	198.3	(+) 19.8	1938	393,426	158.8	(+) 3.4
1928	514,772	207.8	(+) 9.8				
1929	560,976	226.5	(+) 9.0				
1930	453,517	183.1	(-) 19.2				
1931	540,158	218.3	(+) 19.2				
1932	513,402	207.1	(-) 5.1				

Note: Figures slightly differ from those given in the preceding table, because they come from the report of the Finance Ministry.

Price of Raw Silk

In January, 1920, raw silk was quoted at ¥4,360 per bale of 16 kan, the highest price in the history of the country's silk business. At that time the volume of production was 360,000 bales, but during the next 10 years production increased to 730,000 bales, but unfortunately the prices did not fall in inverse ratio. Had

they done so, Japanese producers would have been happy, for in June, 1932, the price fell below one-tenth that of 1920, whereas the output had only doubled. In 1933 it regained a little, but in 1934 the price fell to its lowest, and it seemed to be showing an upward tendency from the following year. It went down again in 1938, although the forecast for 1939 is most encouraging.

RAW SILK PRICE AT YOKOHAMA SPOT MARKET

(In yen)

(Standard quality; per 100 kin, 133 lbs.)

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Average
1926	1,942	1,860	1,711	1,503	1,519	1,576	1,602	1,557	1,601	1,532	1,466	1,441	1,585
1927	1,413	1,418	1,414	1,416	1,451	1,427	1,374	1,317	1,341	1,301	1,289	1,293	1,375
1928	1,311	1,357	1,356	1,348	1,326	1,251	1,247	1,282	1,312	1,375	1,362	1,370	1,321
1929	1,356	1,378	1,396	1,401	1,341	1,314	1,282	1,302	1,220	1,288	1,221	1,169	1,310
1930	1,174	1,169	1,165	1,139	1,100	795	705	708	648	574	581	562	775
1931	708	684	666	597	531	527	585	577	584	548	556	567	583
1932	672	653	618	534	473	469	536	803	938	891	914	928	702
1933	770	694	655	728	786	970	954	857	851	713	586	555	766
1934	583	643	570	538	523	494	474	463	465	510	550	598	537
1935	634	617	590	607	614	592	632	754	830	912	931	874	674
1936	916	764	749	746	691	681	738	771	734	771	863	871	775
1937	915	883	909	877	820	832	880	841	828	768	719	687	830
1938	683	707	713	700	701	702	797	762	778	827	808	817	750
1939	864	956	1,027	—	—	—	—	—	—	—	—	—	—

American Consumption The American consumption of Japanese raw silk in the silk year 1937-38 amounted to 357,600 bales, a decrease of 86,534 bales from the previous year. But the percentage to the total rose from 90 per cent for 1936-37 to 94 per cent for 1937-38.

AMERICAN CONSUMPTION OF
RAW SILK IN 1937-38

(In bales)

	Consumption	Imports	Stocks in N.Y. (June, '38)
Japanese silk	357,600	358,749	40,299
European silk	15,081	14,081	1,667
Chinese silk	7,799	6,551	2,491
Total	380,480	379,381	44,457

Raw silk distribution at home and the distribution in the United States were as follows:

RAW SILK DISTRIBUTION IN DOMESTIC MARKETS

(Arrivals and Deliveries at Kobe and Yokohama)

—Quantity in bales—

Years & Months	Arrivals	Sales	Sales in Japan
1937:			
Jan.	31,612	33,657	2,914
Feb.	33,702	31,165	2,861
Mar.	43,711	39,062	3,874
Apr.	40,809	39,023	2,747
May	38,595	38,894	3,793
June	30,936	26,873	5,225
July	50,319	44,162	2,870
Aug.	52,985	48,487	980
Sept.	54,899	48,503	1,881
Oct.	50,047	49,092	2,291
Nov.	51,520	45,106	3,117
Dec.	46,824	41,564	4,863
1938:			
Jan.	7,139	29,817	30,643
Feb.	6,088	33,011	30,065
Mar.	5,739	43,028	36,904
Apr.	6,306	40,825	30,697
May	6,024	42,560	40,620
June	3,764	32,157	32,463
July	5,448	45,152	36,414
Aug.	5,818	52,506	50,014
Sept.	6,270	51,019	46,069
Oct.	5,576	50,217	46,815
Nov.	5,509	47,181	42,667
Dec.	4,162	45,305	46,218
1939:			
Jan.	2,839	21,473	22,374

DISTRIBUTION OF RAW SILK IN AMERICA IN 1937-38

(Quantity in bales)

Months	Imports		Consumption	
	Japanese	Total	Japanese	Total
1937:				
Jan.	44,093	50,328	40,203	44,198
Feb.	32,984	37,348	35,577	38,484
Mar.	29,200	32,257	35,983	39,834
Apr.	37,511	39,712	37,436	40,561
May	32,207	35,698	31,964	35,278
June	36,945	40,037	32,329	35,783
July	26,060	27,337	28,681	31,399
Aug.	34,911	36,246	32,030	33,557
Sept.	35,674	36,146	35,002	36,372
Oct.	31,623	32,879	35,088	36,002
Nov.	34,737	36,339	30,687	31,749
Dec.	25,394	26,093	21,092	21,982
1938:				
Jan.	29,137	29,858	29,488	30,715
Feb.	24,501	25,416	29,019	30,260
Mar.	24,399	27,376	32,235	34,884
Apr.	35,233	38,510	30,483	33,381
May	21,358	24,248	25,062	28,687
June	35,722	38,933	28,733	31,492
July	29,154	30,441	30,552	32,593
Aug.	35,376	35,946	37,150	38,508
Sept.	38,021	39,808	37,652	38,844
Oct.	37,267	38,731	34,049	35,631
Nov.	41,435	44,006	39,375	41,599
Dec.	37,846	42,264	32,776	35,264
1939:				
Jan.	32,294	36,092	36,915	40,816

CHAPTER XV

FISHERIES

General

Japan Leads On account of her unique position as a maritime country Japan's fishing industry has naturally developed from of old until today Japan occupies the first position in the world in the output of aquatic products which amounted to ¥660,813,807 in 1937 as the following table shows. These products consist mainly of fish, shell-fish, seaweed, which are used as food, fish oils and animal fertilizers.

Value of Fishery Products in 1937

Classification	Value in yen
Coastal Fishery	219,649,403
Pelagic fishery, home	89,887,033
Pelagic fishery, colonial	7,203,405
Whaling	18,747,886
Trawling	7,951,200
Fishery in Russian waters	37,598,284
Floating canneries in	
Kamchatka	25,808,797
Aquiculture	28,974,262
Fish manufactures	214,870,754
Isinglass	10,122,783
Total	660,813,807

Fisheries in 1938-39

Fisheries in Japan are being controlled by powerful capitalists with the progress and expansion of the industry in recent years. In 1937, the Nichiro Fishery Company which operates in Soviet waters and northern seas extended its sphere of activity to the Chishima island through the Horomushiro Fishery Company, and is going to operate in the entire area from Kamchatka to North Chishima in 1938. The areas left by the company are going to be monopolized by another company i.e. the Nippon Suisan. The three old fishery companies, the Kyodo Gyogyo, the Nippon Suisan and the Nippon Shokuryo Industry, were amalgamated into the Nippon Suisan (Fishery) Company capitalized at ¥91,500,000. The new company owns most of the floating crab canneries and cold storage equipment and specializes in trawling fishery. It is the largest Japanese fishing corporation with its activities covering the wide expanse of water from the Arctic to the Antarctic oceans.

The total exports of fishery products in 1938 amounted to ¥132,503,000. Details are given below in comparison with 1937:

	1937	1938
	(unit: ¥1,000)	
Canned crabs, salmon, etc.	86,905	92,819
Fresh fish and shell-fish	21,916	21,931
Powdered fish for fertilizer	11,159	5,182
Fish and whale oils	15,299	6,902
Hardened fish oil	9,524	4,333
Shells	—	1,336
Total	144,803	132,503

Not a small amount may be added to the total from the exports of canned salmon which the Nichiro Gyogyo Company sends to Great Britain directly from Soviet waters.

The long pending revision of the fishery convention between Japan and the Soviet Union was not realized in 1938 also, but a provisional agreement for prolonging the validity of the old convention for one year which had been concluded at the end of 1937 was repeated again early in 1939 for another year.

In the fall of 1938 and early in 1939, fishery enterprisers became united by groups for the protection of their interests and the Japan Bonito and Tunny Fishery Association, the Japan Federation of Canned Fish Manufacturers' Associations and the Fishery Products Trade Association were organized.

On May 23, 1939, the first national meeting of fishery associations was held in Tokyo, in which 800 delegates of about 4,000 fishery associations were present, and made decisions on matters relative to the promotion of the industry and a smooth supply of fishery materials which now became one of their grave concerns on account of the national economic control on such materials as rubber goods and fuel oil.

Antarctic Whaling In September and October of 1938, 5 large whalers set sail for the Antarctic. Their equipments were as follows:

Name of Whaler	Tonnage	No. of Crews	No. of Catcher Boats	No. of Gunners
Tonan Maru No. I	9,800	250	5	100
Tonan Maru No. II	19,000	334	8	—
Tonan Maru No. III	19,000	300	8	—
Nisshin Maru No. I	16,764	592	8	—
Nisshin Maru No. II	22,000	300	9	—

The Tonan Maru No. II came back to Kobé on April 18, 1939, which caught 600 whales and brought back 6,500 tons of whale-oil, 300,000 kin of salted whale and 54,000 kin of whale-skin for imitation leather.

The Nisshin Maru No. I returned to Yokohama on April 19, 1939, which caught 1,520 head, and brought back 72 tons of whale-fin, 3 tons of whale teeth, and 5 tons of whale-bone for substitute materials, and 340 tons of salted whale.

Persons Engaged in Fisheries

The fishery industry in Japan is now

run on a modern industrial basis and especially pelagic fishing is developing rapidly. But by far the larger number of fishermen are still engaged in working in the old-fashioned way, generally on a small scale. In 1937, as many as 1,501,882 persons were engaged in all kinds of fishery industry, and of this number 1,200,208 were males and the rest females. Of the total number, 1,078,142 were fishermen, 152,426 were engaged in cultivation and 271,314 in the manufacture of aquatic products.

NUMBER OF PERSONS ENGAGED IN VARIOUS BRANCHES OF THE FISHERY INDUSTRY

Year	Total Number	Fishermen	Those engaged in Cultivation	Those engaged in Manufacture
1928	1,496,258	1,130,430	119,986	247,842
1929	1,490,728	1,112,002	120,933	257,791
1930	1,482,355	1,109,700	122,116	252,119
1931	1,482,520	1,110,506	124,784	247,113
1932	1,499,040	1,106,850	141,394	250,796
1933	1,499,175	1,097,254	144,655	257,266
1934	1,521,916	1,103,346	151,007	269,563
1935	1,521,477	1,098,999	155,203	267,275
1936	1,534,432	1,102,502	154,627	277,303
1937	1,501,882	1,078,142	152,426	271,314

FISHERY EMPLOYERS AND EMPLOYEES

Year	Employers	Employees
1928	633,487	864,771
1929	633,080	857,646
1930	635,241	847,114
1931	634,699	847,821
1932	640,318	858,722
1933	635,849	863,326
1934	640,735	881,181
1935	633,435	888,042
1936	637,031	897,401
1937	619,227	882,655

Fishing Boats and Vessels

The total number of boats and vessels engaged in fishing at the end of 1937 was over 364,260, of which 297,961 were without engines, while 66,299 were with engines. The number of smaller boats, having capacity of less than 5 tons, is decreasing, while the number of vessels having engines has steadily increased. This shows an improvement in vessels and in the method of fishing.

Year	Total Number of Boats	Boats without Engines		Boats with Engines	
		Engines	Steam	Motor	Motor
1919	384,609	380,577	99	3,933	
1930	359,295	323,228	159	35,908	
1931	360,690	318,443	185	42,062	

Year	Total Number of Boats	Boats without Engines	Boats with Engines	
			Steam	Motor
1932	360,686	315,217	244	45,225
1933	363,473	314,434	250	48,789
1934	364,582	311,553	87	52,942
1935	366,019	308,541	96	57,382
1936	366,267	304,098	106	62,063
1937	364,260	297,961	97	66,202

FISHING BOATS AND VESSELS CLASSIFIED ACCORDING TO KINDS AND CAPACITIES

(at the end of each year)

Kinds and tonnage of steamers	1933	1934	1935	1936	1937
Without engines	314,434	311,553	308,541	304,098	297,961
Under 5 tons	306,381	303,342	300,651	266,738	290,734
5-10 "	7,582	7,635	7,317	6,779	6,637
10-20 "	417	529	530	499	568
20 " and over	54	47	43	22	22
With engines	49,039	53,029	57,478	62,169	66,299
Steam engines	250	87	96	106	97
Under 50 tons	157	63	23	24	3
50-100 "	13	2	3	10	1
100 tons and over	80	22	70	72	93
Oil engines	48,789	52,942	57,382	62,063	66,202
Under 5 tons	33,714	37,053	40,658	44,774	48,105
5-10 "	6,516	6,772	6,841	6,999	7,198
10-20 "	6,498	6,724	7,154	7,454	7,804
20-50 "	1,688	1,871	2,108	2,117	2,295
50 tons and over	373	522	621	719	802

Coastal Fishery

Fish, shell-fish, etc. caught in 1937 amounted to ¥219,649,403, an increase of ¥7,001,383 or 3.3 per cent over the previous year, the major classification of which was as follows:

	Quantity	Value
Fish	494,481,117kan	¥162,844,491
Shellfish	37,643,983	10,451,464

	Quantity	Value
Crustaceans and Mollusca	40,874,838kan	¥31,426,069
Seaweed	105,707,575	6,219,642

The amount of catches in coastal waters since 1928 is shown in the following table. In 1930-32 while the value of catches showed a gradual decrease, catches were steadily increasing, showing thereby that the decrease in value was due to decline in price caused by the depression of those years, but in 1937 the prices rose to a certain extent.

(Quantity in Metric Tons, Value in ¥1,000)

Year	Total		Fresh Fish	
	Quantity	Value	Quantity	Value
1928	2,123,777	209,264	1,469,120	156,560
1929	2,136,252	204,498	1,489,973	153,424
1930	2,302,036	162,928	1,538,580	121,734
1931	2,526,837	147,806	1,833,826	110,772
1932	2,667,255	145,736	1,886,086	107,818
1933	3,859,993	170,613	2,860,585	128,151
1934	3,254,725	173,137	2,227,173	128,142
1935	2,765,432	181,802	1,929,210	134,672
1936	2,936,882	212,649	2,143,460	159,764
1937	2,545,153	219,649	1,854,304	162,844

FISHERIES

Year	Shellfish		Crustaceans and Mollusca		Seaweed	
	Quantity	Value	Quantity	Value	Quantity	Value
1928	143,984	12,113	134,763	29,931	375,910	11,661
1929	138,828	10,492	149,308	29,311	358,143	11,270
1930	123,100	8,465	136,757	23,169	503,599	9,561
1931	118,752	7,136	148,663	21,892	425,596	8,005
1932	125,328	6,975	179,009	22,951	476,832	7,992
1933	135,593	7,972	204,347	26,288	659,467	8,201
1934	180,033	10,094	190,476	25,617	657,042	9,282
1935	204,532	11,697	136,162	25,260	495,528	10,173
1936	152,328	11,202	157,998	29,373	483,093	12,308
1937	141,094	10,451	153,280	31,426	396,403	14,927

Catches of the more important fishes in the following tables: in coastwise fishery since 1932 are shown

CATCHES OF PRINCIPAL FISH BY KINDS

(Unit ¥1,000)

Kind of Fresh Fish	1932	1933	1934	1935	1936	1937
Herring	7,253	13,378	7,157	5,077	4,381	5,506
Sardine	20,756	26,035	26,314	28,257	40,958	37,894
Bonito	2,081	2,325	2,687	1,901	2,419	2,021
Mackerel	4,555	5,746	5,830	6,596	8,406	8,938
Tunny	4,601	4,715	4,991	6,163	7,165	6,358
Yellow-tail	9,075	10,934	9,654	9,671	11,531	10,382
Cod	2,997	3,287	3,781	4,822	5,730	4,625
Shark	667	857	909	718	868	1,457
Sea-bream, red	8,602	10,434	9,685	9,786	10,199	10,582
Sea-bream, black	1,780	1,904	2,176	2,158	2,221	2,303
Flat-fish	3,532	3,694	4,135	4,330	4,757	4,807
Cybiun	1,976	2,072	2,557	2,449	2,652	2,716
Horse-mackerel	3,677	4,390	4,501	4,877	5,781	5,595
Flying Fish	711	902	907	958	769	918
Grey mullet	2,367	2,779	2,655	2,722	2,754	2,843
Konosirus	720	863	804	838	791	899
Dog-salmon	2,558	3,636	4,690	4,994	9,154	11,815
Trout	1,715	1,956	5,312	5,244	3,995	6,261
Japanese smelt	2,789	2,473	2,595	2,915	3,291	3,603
Eel	2,453	2,425	2,278	2,475	2,492	2,385

VALUE OF VARIOUS KINDS OF SHELLFISH

(Unit ¥1,000)

Kind of Shellfish	1932	1933	1934	1935	1936	1937
Awabi ¹	1,656	1,813	2,849	3,843	3,286	2,515
Oyster	720	423	473	506	533	455
Clam	468	492	493	512	523	561
Sazaé ²	416	456	485	506	576	610
Arca	555	463	405	362	387	231
Asari ³	497	505	434	861	753	780

1 Sea ear, abalone. 2 Turbo cornutus. 3 Tapes philippinarum.

VALUE OF CRUSTACEANS AND MOLLUSCA

(Unit ¥1,000)

Kind	1932	1933	1934	1935	1936	1937
Cuttle-fish	10,169	11,781	10,276	7,734	12,029	11,542

PELAGIC FISHERY

	1932	1933	1934	1935	1936	1937
Octopus	2,898	3,069	3,357	3,736	3,680	4,612
Prawn and shrimp	5,258	6,179	6,320	7,044	6,867	7,234
Spiny lobster	1,051	1,056	1,076	1,170	1,555	1,573
Crab	712	1,411	1,603	2,526	1,902	2,479
Bêche-de-mer	502	584	777	1,015	1,125	978

VALUES OF VARIOUS KINDS OF SEAWEED

(Unit ¥1,000)

Kind	1932	1933	1934	1935	1936	1937
Kombu ¹	3,945	2,345	3,930	4,195	4,389	6,219
Amanori ²	315	515	452	488	551	742
Wakamé ³	722	938	1,026	1,018	1,498	1,238
Tengusa ⁴	1,616	1,783	1,466	1,961	2,894	3,322
Funori ⁵	644	698	877	894	958	1,070

1 Laminaria. 2 Porphyra. 3 Undaria pinnatifida. 4 Gelidium corneum
5 Gloiopeltis furcata.

Pelagic Fishery

Large-sized vessels with motors have increased greatly in number of late. There are over 10,000 vessels of over 10 tons, many of which are actively engaged in fishing at distances of up to 700 miles from Formosa and Japan proper. The northern seas have been opened up by floating crab canneries, and mother vessels for the salmon and salmon trout fisheries. But there are still vast undeveloped areas in the Behring Sea, the Sea of Okhotsk, the Maritime province waters, the South Seas, the South China Sea, the Gulf of Siam, and even in the Southern Pacific, so that the future for pelagic fishery for Japan is bright and of great importance to her. The following sections deal with different branches of deep-sea fishing.

In Home Waters In 1937, the number of vessels engaged was 9,783, the number of men 122,892 and the amount of catches 229,795,609 kan of a value of ¥89,887,033, exclusive of catches in colonial waters. The vessels with engines numbered 9,568, while those without numbered only 215.

Catches of principal fish are as follows:

	In 1,000 kan	In yen
Bonito	24,820	13,186,667
Tunny	9,865	12,340,259
Sea-bream	2,220	4,324,556
Flat-fish	10,723	5,611,904

The number and descriptions of vessels engaged in this fishing with their catches, since 1932, are given below:

NUMBER AND CREWS OF VESSELS ENGAGED IN DEEP-SEA FISHING IN HOME WATERS

Year	Total Number of Vessels		Vessels without Engines		Vessels with Engines	
	No.	Tonnage	No. of crew	No.	Tonnage	No. of crew
1932	8,690	172,621	111,673	408	3,013	2,914
1933	8,225	181,957	111,919	282	1,916	1,482
1934	8,705	194,407	110,983	297	2,038	1,686
1935	8,984	199,069	115,689	171	1,321	1,133
1936	9,885	215,026	125,775	240	1,940	1,391
1937	9,763	221,925	122,692	215	1,679	1,134

VALUE OF DEEP-SEA FISH CAUGHT IN HOME WATERS

In Japan Proper

(Unit ¥1,000)

Kind of fish	1932	1933	1934	1935	1936	1937
Sardine	2,506	3,412	3,702	5,771	7,779	6,977
Bonito	8,404	11,661	11,048	10,888	12,963	13,186
Mackerel	2,183	2,873	2,973	3,473	4,321	3,893
Tunny	9,040	9,788	10,753	10,245	11,071	12,340

FISHERIES

	1932	1933	1934	1935	1936	1937
Cod	1,507	2,102	2,967	3,515	6,192	6,693
Shark	2,606	2,848	2,686	2,946	4,210	4,685
Sea-bream	4,925	5,449	5,470	5,269	5,530	4,324
Flat fish	4,051	5,287	5,184	5,323	6,358	5,611
Cybium	37	31	53	38	25	21
Skipper	950	1,299	1,655	1,237	1,713	1,746
Others	17,811	21,230	22,391	25,555	27,322	30,404
Total	54,020	65,986	69,428	74,261	87,483	89,887

In Korean Waters

	1933	1934	1935	1936	1937
Number of boats	1,343	832	1,063	—	—
Total value of catches	¥3,339,410	¥3,241,283	¥4,020,884	¥3,063,063	¥3,196,234

In Formosan Waters

	1933	1934	1935	1936	1937
Number of boats	50	42	15	15	124
Total value of catches	¥191,559	¥181,812	¥26,083	¥23,318	¥126,364

In Kwantung Waters

	1933	1934	1935	1936	1937
Number of boats	288	288	212	200	167
Total value of catches	¥641,071	¥644,465	¥922,330	¥978,000	¥531,289

In South Sea Mandated Islands

	1933	1934	1935	1936	1937
Number of boats	—	—	—	84	128
Total value of catches	—	—	—	¥1,830,800	¥3,349,518

Norwegian Method Followed Whaling is being carried out according to the Norwegian method. As this method requires quick movements the vessels used are small-sized ones of a capacity below 120 tons. In order to allow whales to breed and also to maintain order in the work the Government has made it a rule that whaling should be carried on only under permit. The Government furthermore restricts the number of vessels engaged in this work to 30 in seas other than the South

or North Pacific Ocean. It also orders vessels to operate from headquarters placed in 18 suitable places along the coast of Hokkaido, the North-Eastern Sea, South-Western Sea and the Japan Sea.

Japanese whaling is now extending to the Antarctic Ocean and the Japanese whalers made good catches there in recent years. The total value of catches and manufactures reached ¥18,747,886 in 1937. Details follow:

WHALES CAUGHT (Value in yen)

Whales caught		1933	1934	1935	1936	1937
In home waters						
Total	No.	1,156	1,356	1,598	1,641	1,814
	Value	1,142,183	1,991,421	2,466,962	2,577,692	3,397,426
Finback whale	No.	124	178	134	92	92
	Value	148,402	427,093	440,000	330,000	332,257
Blue whale	No.	6	24	21	3	7
	Value	11,829	90,118	118,000	24,000	49,040
Sperm whale	No.	617	786	1,001	1,133	1,208
	Value	532,262	883,220	1,080,000	1,369,000	1,950,262
Humpback whale	No.	58	42	48	58	57
	Value	98,736	88,880	179,000	219,000	204,945
Sye whale	No.	384	324	392	351	445
	Value	343,908	495,210	641,000	616,000	839,946
Right whale	No.	3	2	2	4	5
	Value	6,986	6,900	8,856	19,517	20,976

TRAWLING

Whales caught		1933	1934	1935	1936	1937
In colonial waters						
Total	No.	202	123	173	173	236
	Value	433,849	429,683	647,434	754,322	894,680
Finback whale	No.	164	106	139	149	210
	Value	284,500	405,741	546,000	666,000	807,490
Blue whale	No.	1	—	—	—	5
	Value	1,156	—	—	—	28,413
Sperm whale	No.	1	2	4	2	5
	Value	1,085	2,656	4,547	3,619	14,781
Humpback whale	No.	34	15	30	21	16
	Value	45,272	21,066	97,000	83,000	43,996
Sei whale	No.	1	—	—	1	—
	Value	540	—	—	1,624	—
Grey whale	No.	1	—	—	—	—
	Value	1,296	—	—	—	—

Antarctic Whaling

	Number of mother ships	Number of men engaged	Whales caught	Estimated Value (In ¥1,000)	
				Whale oil	Total including others
1934	1	213	213	473	486
1935	1	343	639	2,180	2,262
1936	2	766	1,965	8,662	8,726
1937	4	1,796	5,565	13,843	14,455

Trawling Trawling in Japan is modelled after that now being carried on in the North Sea. The steam vessels engaged are from 200-300 tons in size, some being fitted with Diesel engines. A permit must be obtained from the Government before commencing trawl fishing. At present the Government is restricting trawlers in the Inland Sea, the East China Sea, and the Yellow Sea to 70 vessels. 56 vessels make Shimonséki their headquarters, while 8 work from Nagasaki, and 6 from Hakata. It also prohibits trawlers, by special regulations, from operating in the nearby

seas in order to keep the coastal water free from the devastation caused by the destruction of immature fish, etc. During the World War there was a fall in the catches by trawlers owing to the decrease in number of trawlers, but since 1921, the trawling business has again become active though the number of trawlers as mentioned above is restricted to 70. But, it was increased later and, in 1937, there were 74 vessels with 1,460 crews. Catches by trawling in 1937 amounted to 13,380,415 kan, value ¥7,951,200.

FISH CAUGHT BY TRAWLING
(Quantity in metric ton, value in ¥1,000)

Kind of Fish	1933	1934	1935	1936	1937
Total quantity	50,351	51,704	14,258,000 (kan)	13,887,000 (kan)	13,380,415 (kan)
Value	6,254	6,721	7,044	6,831	7,951
Pagrus major					
Quantity	129	135	53,000	27,875	23,175
Value	68	87	72	51	50
Sciæna japonica					
Quantity	2,840	2,221	1,381,000	738,000	1,054,498
Value	577	517	1,155	723	937
Sciæna schlegelii					
Quantity	14,968	18,811	4,782,000	4,753,000	4,613,250
Value	1,361	1,609	1,698	1,854	2,069
Flat fish					
Quantity	5,507	5,452	1,050,000	881,000	662,830
Value	655	749	608	612	508
Shark					
Quantity	2,597	2,549	461,000	572,000	451,199
Value	171	179	137	178	158
Others					
Quantity	24,309	22,534	6,631,000	6,915,000	6,575,463
Value	3,419	3,578	2,328	2,217	4,226

Fishery in Soviet Waters

Fishery in Russian or northern waters is an important right conceded to Japan in the Treaty of Portsmouth, signed at the conclusion of the Russo-Japanese War of 1904-05. In 1923, a new convention, under the conditions of the above Treaty was concluded for a period of eight years, after the expiration of which time the pact is to be renewed. The districts to be worked, extending from the Maritime Provinces to Kamchatka, are leased from the Soviet Union at annual auctions held at Vladivostok. (As to the disputes between Japan and Russia on the fishery question in recent years, see Chapter VI.)

In 1937 the number of fishing lots actually worked was 355, the number of steamers 141, sailing vessels 1, and the number of fishermen and others engaged in the fishing 19,858. The amount of salmon, trout, and herrings caught in 1937, was 549,858 koku in total, and the crabs caught numbered 7,759,066. Good catches of salmon and trout are made every other year, while the quantity of crabs has a tendency to become larger in recent years. The amount of salmon, crab, etc. canned was 1,155,407 cases, valued at ¥23,234,699 in 1937. In the same year the amount of salmon and trout salted reached 555,432 koku. The following table shows the number of fishing districts leased, amount of fish caught, etc.

NUMBER OF FISHERIES, FISHING VESSELS, FISHERMEN, AND PRODUCTS IN SOVIET WATERS

	1933	1934	1935	1936	1937
Number of fisheries:					
Fisheries leased from U.S.S.R.	357	386	395	399	389
Fisheries worked for the year	350	370	376	376	355
Fishing vessels:					
Steamships No.	174	171	196	152	141
Tonnage	330,062	360,179	422,000	361,000	331,734
Sailing-ships: Number	1	1	2	1	1
Tonnage	525	525	1,000	525	525
Fishermen	17,240	18,185	17,506	20,364	19,858
Total fish caught 100 kg.	476,652	1,081,620	501,000	571,000	549,858
Dog salmon 100 kg.	231,471	350,787	179,000	338,000	176,750
Trout "	163,185	571,661	280,000	165,000	298,869
Red salmon "	80,016	156,098	40,000	67,000	71,106
King salmon "	1,332	2,575	2,579	1,925	3,086
Herring guano "	648	505	113	34	47
Crab pieces	2,546,331	3,583,413	5,049,000	6,565,000	7,759,066
Fishery products prepared, yen	23,666,332	40,902,998	29,149,000	35,489,000	37,590,284
Salt cured (total)			(koku)	(koku)	(koku)
Quantity 100 kg.	312,267	566,073	343,000	376,000	555,432
Value yen	7,567,889	10,583,126	11,101,000	13,099,000	11,697,618
Salmon					
Quantity 100 kg.	212,957	324,953	172,000	308,000	374,466
Value yen	5,647,006	6,994,973	6,719,000	1,560,000	7,824,974
Trout					
Quantity 100 kg.	99,310	241,120	172,000	68,856	180,946
Value yen	1,920,683	3,588,153	4,382,000	1,560,278	3,872,644
Canned food (Total)					
Quantity cases	698,126	1,429,191	956,000	1,147,243	1,155,407
Value yen	14,588,106	27,859,302	15,686,000	20,198,000	23,234,699
Red salmon					
Quantity cases	287,666	514,543	189,000	343,000	342,325
Value yen	9,272,017	17,671,705	6,089,000	8,626,000	11,840,559
Salmon					
Quantity cases	27,839	48,187	50,000	117,000	1,318
Value yen	543,168	711,288	1,174,000	2,425,000	25,682
Trout					
Quantity cases	357,492	837,306	681,000	637,000	733,055
Value yen	3,603,966	8,076,869	6,675,000	6,338,000	7,084,403
Crab					
Quantity cases	25,129	29,155	36,000	50,000	78,709
Value yen	1,168,955	1,399,440	1,748,000	2,610,000	4,284,055
Others					
Value	1,510,337	2,460,570	2,362,000	2,192,000	2,665,967

FLOATING SALMON CANNERIES IN KAMCHATKA

	Mother ships	Men engaged	No. of catches (in 1,000 pieces)	Canned	Salted	Value (In ¥1,000)		Total
						Frozen	Eggs	
1934	16	5,543	8,944	8,050	1,119	988	82	10,239
1935	8	4,972	11,544	7,785	1,651	590	104	10,129
1936	6	3,478	8,796	7,409	1,760	455	67	9,691
1937	7	3,310	10,115	12,051	1,750	690	122	14,614

Floating Crab Canneries Fishing is carried on by vessels equipped with machinery for the purpose of canning the crabs on the vessels themselves. The first enterprise was made in 1921, and, in 1923, rules regulating the work of crab-manufacture vessels were issued by the Government, which also established districts where fishing was forbidden and made permits necessary before a vessel could set out to the fishery. Recently the rule has been re-

vised, the number of vessels on the western side of Kamchatka being restricted to 18 and the amount of canned crab to 320,000 cases.

Up to 1927, Japanese only were engaged in this fishing, but in 1928 two Soviet vessels came in, in 1929 another two entered and 1930 saw a further increase.

Canned crabs manufactured by this method since 1931 are as follows:

FLOATING CRAB CANNERIES

	1933	1934	1935	1936	1937
Vessels in operation					
Number	9	9	9	9	9
Tonnage	40,724	37,235	34,112	36,737	36,749
Fishermen engaged	2,955	3,120	3,124	3,243	3,420
Crabs caught, pieces	9,461,587	9,930,878	11,332,000	13,948,000	14,913,197
Canned foods					
Quantity cases	153,712	162,079	171,000	184,000	204,375
Value in yen	7,476,267	7,732,616	8,429,000	9,490,000	11,193,937

Note: A case contains 22.32 kg.

Aquiculture

The conservation and cultivation of aquatic resources is very important to Japan as fish and other marine products constitute a great part of the staple diet of her people. Great care and study are being given to aquiculture in the country, the incubation and letting loose of salmon and trout and the cultivation of fish in shallow waters are being well looked after by the Government. From 1926 on, not only the incubation of salmon and trout, but also the transfer of crawfish, shad, etc., was tried several times with assistance obtained from the U.S.A. The aquicultural production for 1937 amounted to ¥28,974,-

262. The amount gained ¥3,422,666 or 12.4 per cent, over 1936. Of this total, production of carp amounted to ¥5,024,307; that of eels ¥5,092,320; that of oyster ¥2,022,879; that of sea weeds ¥9,987,807; and that of pearls ¥1,543,837. The principal fish, shell-fish and seaweed which are now being cultivated are carp, eel and tortoise in fresh water, and the seaweed laver in sea-water. The breeding is done in rice-fields, breeding ponds, reservoirs, marshes, etc.

The number of aquicultural establishments in 1937 was 159,038, the area covered 149,314,974 tsubo. Condition and results of the industry in recent years are given in full in the following tables:

NO. OF ESTABLISHMENTS ENGAGED IN AQUICULTURE, AREA AND PRODUCTS

Year	No. of Establishments	Area sq. metres	Value of Products (In yen)
1933	159,091	537,908,403	19,283,371
1934	163,549	522,221,417	22,318,327
1935	161,779	157,761,107tsubo	25,534,550
1936	162,326	154,930,254	25,551,596
1937	155,038	149,314,974	28,974,262

FISH, SHELL-FISH, ETC., RAISED THROUGH AQUICULTURE

	1933	1934	1935	1936	1937
Carp:				(Quantity in kan)	
Ricefields					
Quantity kg.	1,923,199	2,094,821	516,000	509,000	496,940
Value yen	659,960	690,306	681,000	683,000	705,948
Breeding-ponds					
Quantity kg.	5,571,454	6,154,268	1,657,000	1,607,000	1,611,569
Value yen	1,990,842	2,139,843	2,169,000	2,203,000	2,345,091
Reservoirs, marshes, etc.					
Quantity kg.	3,394,560	3,542,741	1,006,000	1,256,615	1,249,652
Value yen	1,272,190	1,356,034	1,401,000	1,629,000	1,973,268
Eel:					
Breeding-ponds					
Quantity kg.	5,511,315	6,042,968	1,741,000	1,809,000	1,863,769
Value yen	3,475,012	3,732,627	4,681,000	4,931,000	5,018,502
Reservoirs, marshes, etc.					
Quantity kg.	146,880	121,181	30,000	35,000	27,027
Value yen	111,326	92,250	77,000	82,000	73,818
Goldfish:					
Quantity kg.	513,958	1,865,014	493,000	555,000	554,150
Value yen	648,101	593,605	571,000	581,000	667,446
Oyster:					
Quantity kg.	35,275,125	43,397,078	15,985,000	15,741,000	14,949,475
Value yen	1,193,066	1,437,378	1,998,000	1,858,000	2,022,879
Asari:					
Quantity kg.	29,530,433	38,522,404	11,691,000	11,359,000	10,459,681
Value yen	633,913	691,690	801,000	890,000	1,274,095
Pearl:					
No. of shells	2,492,727	4,510,158	7,750,000	7,072,000	10,857,953
Value	909,355	1,472,467	1,395,000	984,000	1,543,837
Pearl shells:					
No.	13,932,890	50,515,256	37,267,000	36,216,000	29,790,061
Value yen	286,653	637,196	829,000	905,000	869,751
Amanori (Porphyra):					
Quantity kg.	22,409,048	30,649,665	8,855,000	8,410,000	9,346,073
Value yen	6,481,262	7,521,042	8,942,000	8,566,000	9,987,805
Others:					
Value yen	1,621,671	1,953,869	1,989,433	2,239,917	2,491,822

Manufacture of Fishery Products

The supply of fish depends to a considerable extent on seasonal changes but demand is controlled by the tastes and customs of consumers, so that supply and demand are too often not well balanced. In order to adjust these difficulties satisfactorily, careful studies have been made regarding the storing and preserving of these products. Especially, as the problem of food has become a serious one lately, it is often

argued that a portion of the fishes which are now being turned into fertilizers and which amount to 40% of the total yields, should be converted into food. Under these conditions Japan is paying very careful consideration to the manufacture of fishery products.

The total manufactured fishery products in 1937 was valued at ¥214,870,754, of which ¥33,115,259 was in fertilizers, ¥18,001,508 in fish oils, ¥730,026 in Glolopeltis dried, and the balance of ¥163,023,961 was the value of food products.

MANUFACTURED FISHERY PRODUCTS
(Units: Quantity in metric ton, value in ¥1,000)

Year	Total Value	Food Products		Fertilizers	
		Quantity	Value	Quantity	Value
1933	156,294	409,081	119,926	438,117	28,843
1934	167,048	442,931	128,804	424,017	28,913
1935	175,540	447,151	137,472	374,449	28,552
1936	215,861	132,637,000 kan	156,144	120,298,000 kan	37,474
1937	214,870	142,956,902	163,024	88,985,600	33,115

Year	Fish oils		Sukifunori*	
	Quantity	Value	Quantity	Value
1933	70,633	6,947	679	576
1934	82,638	8,702	788	628
1935	62,205	8,793	711	723
1936	30,079,000 kan	21,527	190,000 kan	716
1937	24,437,345	18,001	172,806	730

Note: Production of Japanese isinglass is not included in the table.

*Dried seaweed, *Glolopeltis furcata*.

Products as Food To the present the Japanese people have not paid much attention to the manufacture of fishery products, except "fushi", as articles of food, because fresh fish is available at almost any time and any place. But since there is a large consumption of such products among people of Western nations attention has been turned

to the preservation of fish with a view to export. The principal items preserved are "fushi" (fishmeat steamed and dried), fish dried, salted and dried, boiled and dried, smoked, salt-cured, canned, and Japanese isinglass. Production of each for the last few years is as follows:

VALUE OF FOOD PRODUCTS
(Unit ¥1,000)

Year	Fushi	Dried	Salted and Dried	Boiled and Dried	Smoked	Saltcured	Miscellaneous
1933	15,628	21,221	8,300	16,794	360	9,773	47,848
1934	15,823	23,250	8,821	19,781	372	9,704	51,051
1935	14,314	22,306	10,040	22,547	289	11,859	56,117
1936	17,525	27,264	10,527	23,469	402	14,559	62,398
1937	16,948	27,124	10,103	21,999	438	19,313	67,098

Japanese Isinglass Kantén or Japanese isinglass is a gelatinous substance extracted from seaweed, especially from

Gelidium amansii, used for food and industrial purposes, production of which is shown in the following table:

	1933	1934	1935	1936	1937
No. of establishments	429	449	463	512	520
Total production Quantity kg.	2,081,404	2,320,654	665,000 kan	680,000 kan	708,203 kan
Value yen	4,718,521	5,257,378	6,390,315	9,712,497	10,122,783

Fertilizers Details of the production of fish fertilizers are given in the table below. As the table shows most fertilizers are made from herrings, sardines and bonito. Where transportation fa-

cilities are not very good or where there is no satisfactory equipment for manufacturing them into food fishes are converted into fertilizers.

FISH FERTILIZERS
(Quantity in metric ton, value in ¥1,000)

Year	Total	Herring	Sardine	Fish bone	Sardine	Dried	Others
		cake	cake	cake	dried	Herring	
	Quantity	Value	Value	Value	Value	Value	Value
1933	438,117	23,843	5,121	17,750	526	966	2,300
1934	424,017	28,913	3,319	19,536	969	1,006	2,163
1935	374,449	28,552	1,679	18,157	945	1,194	1,688
1936	120,298,000 kan	37,474	1,024	26,715	1,220	857	1,893
1937	88,985,600 kan	33,115	973	21,545	1,688	359	1,370

Fish Oils Fish oils used for industrial purposes are sardine oil, herring oil, cod oil, whale oil and shark oil. Production in 1937 was 24,437,345 kan,

a decrease of 5,642,069 kan as compared with the previous year. The value amounted to ¥18,001,508, a loss of ¥3,526,606.

FISH OILS

(Value in ¥1,000)

Year	Total	Sardine	Herring	Cod	Whale	Shark	Others
1933	6,947	4,804	295	255	439	448	703
1934	8,702	6,416	358	375	408	431	711
1935	8,792	6,687	165	471	545	724	197
1936	21,527	16,112	361	1,006	2,371	1,026	649
1937	18,001	14,272	170	849	1,151	947	609

Manufacture of Salt

The salt industry in Japan is carried on under the Salt Monopoly Law. Salt is manufactured by the boiling method. The cost of production, therefore, is

March 31	No. of Establishments	No. of Manufacturers	No. of Employees	Area of Saltbeds in hectare	No. of Boiling Pans	Production
1933	3,361	3,378	36,672	4,538.48	3,804	630,835,033 kg.
1934	3,339	3,347	36,855	4,533.92	3,709	676,300,500
1935	3,308	3,303	36,390	4,612.80	3,693	604,440,328
1936	3,261	3,232	35,787	4,571 cho	3,680	864,659,761 kin
1937	3,239	3,221	35,310	4,561 ..	3,641	892,905,280 ..

Organizations Connected with Fisheries

Suisankai (Fishery Societies) Suisankai is a public corporation, recognized by the Suisankai Law of 1921, which has as its purpose the development of fishery. It is an organization covering a particular county or city and includes among its members, in addition to those engaged in fishing, persons having rights to fish and those who manufacture, trade in, or store fishery products. A prefectural suisankai is organized by county and city suisankai of that particular prefecture, and at the head of prefectural suisankai and suisankai located abroad is the Teikoku (Imperial)

high, and the quantity produced is not enough, so that a large quantity of cheap salt is imported every year. The number of salt producing establishments, production, production areas, etc., in Japan are as follows:

Suisankai. The functions of suisankai include the encouragement of fishery, the improvement and extension of the manufacture of marine products, the development of fishing districts, protection of aquaculture, etc. It also collects statistics, investigates markets, or engages in brokerage, etc. On the social side, the rescue of shipwrecked vessels, improvement of relations between employers and employees, employment agency work, mediation in labour troubles, etc., are looked after by the societies. And lectures on fishery subjects, exhibitions and fishery shows are held by them. The number of suisankai, their members, etc. during the last few years are as follows:

SUISANKAI (Fishery Societies)

	1933	1934	1935	1936	1937
Fishery Societies:—					
Total	380	349	346	344	344
County and city fishery societies	340	308	305	303	303
Prefectural fishery societies	39	40	40	40	40
Imperial fishery society	1	1	1	1	1
Number of members of societies:					
County and city fishery societies	430,767	450,276	450,896	444,135	447,496
Prefectural " "	336	304	298	294	299
Imperial " "	42	42	43	43	43
Expenditure of fishery societies (yen)	1,778,277	1,932,159	1,644,675	1,545,577	1,672,326

Suisankumiai (Fishery Guilds) There are two classes of suisankumiai. The first of these is a corporate judicial person, organized by fishermen or those

who are engaged in the manufacture or sale of aquatic animals or plants in a particular district for the purpose of the encouragement and improvement of

fishery, cultivation and propagation of aquatic products, etc. The number of suisankumiai is decreasing gradually. At one time there were as many as 220 or more of these Kumiai or guilds. In 1937 there were 65, with a membership of 41,274 and an expenditure of ¥1,180,528. The Act for Suisankumiai in Foreign Waters promulgated in 1902, authorizes any Japanese engaged in fishery or in the manufacture or sale of aquatic products in foreign waters, either by permit or by treaty, to organize suisankumiai. At present Roryo Suisankumiai (Suisankumiai in Russian Waters) is the only one which belong to this class. This guild is formed by fishermen and those engaged in the manufacture and sale of aquatic products in the Maritime Province, Kamchatka, and Saghalien Island. In 1937, its members were 26. Its especially important task is to encourage amicable relations between the Japanese and Russian fishermen working in the same waters and thus ensure the smooth and effective working of the industry in those parts.

Gyogyo-Kumiai (Fishermen's Societies) Gyogyo-Kumiai is a judicial person recognized by Fishery Law, and is or-

ganized by fishermen living in a particular district. It acquires fishery rights, etc., for member fishermen and takes any measures necessary to further or protect the common benefit of its members.

The principal object of gyogyo-Kumiai is the acquisition of fishing rights, etc. This is quite natural in Japan for fishermen work with their village as unit and no fisherman can work independently. Therefore, fishing rights are mostly secured by gyogyo-kumiai, special privileges being given to the kumiai for securing them.

Though in the original Act, the object of gyogyo-kumiai was restricted to the acquisition of fishing rights, etc., the Act was revised in 1910, whereby the kumiai had the obligation put on them of undertaking any proper measures that would redound to the mutual benefit of fishermen.

Gyogyo-Kumiai Rengokai are corporations of gyogyo-kumiai. Their principal functions are joint sales of fishery products, cultivation of fish and rescue of shipwrecked vessels. Their history and number are as shown below:

GYOGYO-KUMIAI (Fishermen's Societies)

No. of societies classified according to no. of members (total)	1932	1933	1934	1935	1936
under 50	1,262	1,371	1,257	1,223	1,198
51—100	892	904	923	933	928
101—200	1,004	975	973	1,694	1,719
201—500	670	687	692		
501—1000	109	120	124	124	123
1001 and over	20	23	25	26	30
No. of members of societies	555,734	570,056	574,328	580,103	594,710
Federations of societies					
No. of federations	69	70	72	74	74
No. of member-societies	917	925	926	941	975

Dogyo-Kumiai or Related Associations Dogyo means the same trade or profession, hence Dogyo-Kumiai are associations of those connected with the same trade. In relation to the fishery industry they are formed by those dealing in aquatic products, canned foods,

salt, cultivation of fish, etc. In 1937, there were as many as 21 dogyo-kumiai connected with the fishing industry. There is also the Dai-Nippon Suisan Kai, which is incorporated for the purpose of the improvement and encouragement of fishery.

CHAPTER XVI

FORESTRY

Introduction

Japan is one of the few countries of the world favoured with extensive forests. The area of forests and fields in Japan including Korea, Formosa and Saghalien Island, was 45,299,105 hectares at the end of 1933 and was about 67% of the whole area of the country, which is 67,538,527 ha. It is about 3.8 times as large as her agricultural land.

Since Japan forms a long narrow chain stretching north and south from the northern extremity of the Kurile Islands to the southernmost point of Formosa, and since her mild climate is very favourable for the growth of plants and trees, it is natural that there should be a thick growth of many varieties. There are as many as 1,500 kinds, of which principal forest trees alone number more than 100. In point of richness in variety, she occupies a high position even among countries which are favoured with larger forest areas. While the amount of timber produced is valued at roughly ¥300,000,000 annually it is still far less than 10% of the value of the total staple products of the country and is not at present enough to fill domestic requirements. Every year it is necessary to import about 10,000,000 koku of lumber, equivalent in value to ¥100,000,000. Furthermore, forestry offers very limited labour opportunities. As compared with agriculture, which gives work to one-half of the total families in Japan, and fishing, which finds employment for 1,500,000 people, the number of persons engaged in forestry is small, being less than 720,000.

Distribution and Character

Forests in Japan stand, roughly speaking, in four different zones: sub-tropical forest zone, evergreen broad leaved forest zone, the deciduous broad-leaved forest zone and coniferous forest zone.

The Sub-tropical Forest Zone This covers the whole of Formosa, the southern half of the Loochoo Islands, including the Yayéyama Islands, annual mean temperature in it being over 21° C. As to the altitude, the zone varies from below 2,000 metres above sea level in the southern part of Formosa to below 1,000 metres above sea level in the northern

part of the same island. In this zone, binroji, tsuga, (*Arenga saccharifera*) basho-banana and bamboo are found.

The Evergreen Broad-leaved Zone This comprises Shikoku, Kyushu, the northern part of the Loochoo Islands and the southern part of Honshu (Main Island) (at 36° N. Lat. and Southwards), the annual mean temperature of this zone being 13°-21° C. As to the altitude, it is 854 metres on an average in Kyushu, 762.5 metres in Shikoku and 610 metres in the southern part of Honshu. Trees which grow in this zone are kusunoki (*Cinnamomum camphora*, Nees), oak, akamatsu (*Pinus densiflora*), white fir, tsuga (*Tsuga sieboldi*, Carr), etc.

The Deciduous Broad-leaved Zone This zone covers the northern part of Honshu, the southern part of Hokkaido and a greater part of Korea, the annual mean temperature in this zone being from 6° C. to 13° C. As regards the altitude, it is from 976 metres to 1,372.5 metres in the northern part of Honshu and 457.5 metres in the southern part of Hokkaido. Trees which grow in this zone are cedar (the Japanese cypress), white fir, todo-matsu (*Abies sachalinensis*, Mast), ezo-matsu (*Picea ajanensis*, Fisch), beech poplar, white birch, etc.

The Coniferous Zone This zone covers the northern half of Hokkaido, the group of the Kurile Islands and the Saghalien Island, the mean temperature of which is 6° C. to below zero. This zone starts at the height of 1,000 metres in Honshu and ends at the height of 2,592.5 metres in the same island, while it ends at the height of 1,667.5 metres in Hokkaido and 610-762.5 metres in Saghalien Island. Principal trees which grow in this zone are ezo-matsu and todo-matsu.

Forests in Kiso district extend over mountain regions which range from 305 metres to 3,050 metres above the sea level along the course of the upper stream of the River Kiso. It covers 104,055 ha. in area and its growing stock amount to 28 million cu. m. Principal trees are the Japanese cypress, the swamp-cypress, sawara (*Chamaecyparis obtusa*, S. et Z.), nezuko (*Thuja japonica*, Maxim) and parasol-pines.

They are old and are thickly grown. The reason that they are retained so well is due to the fact that during the feudal times, the cutting down of these trees was prohibited. Among these, the most magnificent trees are the Japanese cypresses which are about 190 years old. Most of them are 0.46 metre in diameter and 27.45 metres in height.

Forests of sugi in Akita district are widely distributed along the Yonéshiro and Omono Rivers, and belong to the Government. The forests cover an area of about 43,000 ha. and hold stock of 16 million cu. m. The forests, where they are not mixed with other trees, are beautiful and magnificent to look

upon. Most of the sugi in these forests are from 120 to 200 years old, and in a dense part the stands hold as much as 1,400 cu. m. per ha. Some of them are so large that their diameter reaches sometimes to 1.22 metres. The forests are noted for the abundance of timbers of a superior quality. Annual cutting from these forests amounts to 280,000 cu. m.

Area of Forests, etc.

According to the report of the Ministry of Agriculture and Forestry the area of forests in Japan proper was as follows:

(In Japan proper the investigation on the area of forests, bamboo-groves and wild lands (productive yet uncultivated) is carried at the year end every third year.)

AREA OF FORESTS, BAMBOO-GROVES AND WILD LANDS IN JAPAN PROPER

Year (At the year end)	(In hectares)		
	1930	1933	1936
Grand total	23,011,218.74	23,645,731.85	24,186,376
Forested tracts	19,879,240.86	20,575,913.91	21,035,861
Coniferous	4,632,827.81	5,420,360.80	5,658,563
Broad-leaved	8,470,016.53	9,086,657.13	9,007,564
Mixed	6,148,369.59	5,454,838.83	5,758,616
Bamboo-groves	136,329.23	148,348.25	152,684
Miscellaneous	491,697.70	465,708.90	458,434
Bare tracts	3,131,977.88	3,069,817.94	3,150,515
Crown	1,432,649.16	1,413,895.42	1,380,087
National	7,638,263.28	7,857,609.80	7,712,934
Public	4,186,375.15	4,287,336.00	4,444,567
Temple and shrine	141,381.03	144,269.56	152,904
Private	9,612,550.12	10,142,631.07	10,495,885

Stock of Growing Timber

Japan Proper To ascertain the amount of growing timber owned by the Imperial Household, Government, and public and private interests careful investigations are made, the investigations

in the case of public and private interests being carried out by each prefecture. The following statistics show the growing timber in Japan proper in 1933 classified according to ownership: (Quantities in 1,000 cu. m.)

Kind	Crown	Government	Public and Private			Total	%
			Public	Shrines and Temples	Private		
Coniferous trees	32,452	139,948	71,172	7,333	327,510	578,415	46.0
Broad leaved trees	14,121	323,431	83,503	5,000	252,823	678,878	54.0
Total	46,573	463,379	154,675	12,333	580,333	1,257,293	—
%	3.7%	36.6%	12.4%	0.7%	46.6%	—	—

Thus the total standing timber in Japan proper (Hokkaido excluded) is 1,257,293,000 cu. m., of which coniferous trees account for 578,415,000 cu. m. and

broad-leaved trees 678,878,000 cu. m.

Other Parts The following table shows the number, ownership and type of trees in other parts of the country.

STANDING TIMBER IN HOKKAIDO, FORMOSA, KOREA
AND SAGHALIEN ISLAND IN 1933

(Quantities 1,000 cu. metres)

Owners	Hokkaido			Saghalien Island		
	Coniferous Trees	Broad Leaved Trees	Total	Coniferous Trees	Broad Leaved Trees	Total
Crown	32,911	74,130	107,041	—	—	—
Government	165,705	212,599	378,304	165,951	22,905	188,856
Public	19,829	51,448	71,277	—	—	—
Shrines and temples	2	17	19	—	—	—
Private	2,899	28,994	31,893	—	—	—
Total	221,346	367,188	588,534	165,951	22,905	188,856

Owners	Formosa			Korea		
	Coniferous Trees	Broad Leaved Trees	Total	Coniferous Trees	Broad Leaved Trees	Total
Crown	—	—	—	—	—	—
Government	70,006	127,374	197,380	87,902	72,158	160,060
Public	68	297	365	4,316	2,095	6,411
Shrines and temples	—	—	—	2,413	1,472	3,885
Private	828	9,121	9,949	60,658	15,275	75,933
Total	70,902	136,792	207,694	155,289	91,000	246,289

The total stock of growing timber in the country classified according to ownership is as follows:

TOTAL STAND OF TIMBER IN JAPAN IN 1933

(1,000 cu. m.)

Owners	Total		Grand Total
	Coniferous Trees	Broad Leaved Trees	
Crown	65,363	88,251	153,614
Government	629,512	758,467	1,387,979
Public	95,385	137,343	232,728
Shrines and temples	9,748	6,489	16,237
Private	391,895	306,213	698,108
Total	1,191,903	1,296,763	2,488,665

Afforestation

There is great scope for the practice of afforestation in Japan because of the large wild areas, plains where there is only a thin growth of trees, and forests where there are many undesirable trees. However, since a great deal of timber is being cut, reforestation becomes more urgent every year.

Afforestation is divided into two classes, viz., natural and artificial. Natural afforestation is being carried out in only a small portion of the Crown and Government forests, while in most of the public and private forests, conditions are such that no definite plans for natural afforestation have been made. However, as this is liable to cause forests to go to waste careful studies are being made to improve the situation.

In artificial afforestation Japan has had some good experience and artificial afforestation for the Imperial and Government forests is being carried out on a well-planned basis.

New Plantation Area newly planted in 1937 was 118,065 cho, and the number of trees planted was 340,557,533, of which coniferous trees numbered 278,715,478 while broad-leaved trees numbered 50,417,523. The number of trees planted in the Crown owned area in the same year was 11,424,532.

In addition to the above there were 56,993,134 trees supplementarily planted in the forests in 1937, and bamboo-groves newly cultivated were 867.9 cho in area and 1,058,650 in the number of bamboos planted.

Naturally Regenerated Area of forests naturally regenerated in 1937 was 240,820 cho.

ARTIFICIAL AFFORESTATION

(Area in cho)

Year	1935	1936	1937
Area newly planted	109,728.9	119,472.7	118,065.4
Number of trees newly planted	328,020,522	356,350,597	340,557,533
Coniferous area	84,964.3	95,935.4	95,649.7
Number of trees	258,386,282	288,684,326	278,715,475
Broad-leaved area	19,309.9	18,436.7	18,200.9
Number of trees	54,178,683	52,808,322	50,417,523
Crown area	5,454.7	5,100.6	4,214.8
Number of trees	15,455,557	14,857,949	11,424,532

Production of Wood, Bamboo and Other Forest Products
The total value of forest products in 1937 reached ¥432,434,950.

Area of wood and bamboo lands cleared and the value of wood and bamboo produced in recent years were as follows:

	1935	1936	1937
Area cleared in cho	412,012.5	455,398	445,873.7
Total Value in yen	168,761,410	194,840,000	254,991,282
Timber	113,868,550	136,933,000	189,088,543
Fuel wood	52,365,708	55,153,000	63,218,575
Bamboo	2,527,152	2,754,000	2,684,164

During the ten preceding years no marked fluctuation has been observed in movements of quantities of timber and fuel wood produced, while, on the other hand, their value has been show-

ing annually more than moderate decreasing trend until 1934 when it turned to increase.

Value of other forest products in 1937 amounted to ¥177,443,668. Details follow:

Kind	1935	1936	1937
Seeds of trees	47,328	44,716	56,022
Fruits (Chestnuts, Walnuts, etc.)	3,637,943	4,297,997	4,306,391
Barks	2,317,412	2,512,932	2,901,405
Loam grass	17,051,201	18,432,950	21,423,867
Fresh mushrooms (matsutaké)	4,547,224	4,394,132	4,891,987
Dried mushrooms (shiitaké)	4,282,318	5,505,551	4,822,663
Bamboo sprouts	4,143,188	4,888,931	5,202,223
Horse-radish	1,565,726	1,744,885	1,658,627
Charcoal	90,814,783	101,796,857	131,460,169
Total including others	129,083,727	144,347,118	177,443,668

Protective Forests

Besides having a direct value through the produce they yield, forests have a distinct indirect value through influence on climate, conservation of water supplies, prevention of erosion, etc., and in order that the fullest use may be made of them the Government established a system of "protective forests." In the following instances, under the Forestry Act, the Government is authorized to decree that certain forests, etc., shall be considered as "protective forests":

- (1) When it is necessary to protect against soil denudation.
- (2) When it is necessary to protect against sand shifting.
- (3) When it is necessary to protect against flood, wind and tide.
- (4) When it is necessary to protect against avalanches and rolling stones.
- (5) For conservation of water supply.
- (6) For fishery purposes.
- (7) For guiding navigators.
- (8) For public health.
- (9) For scenery.

The area of protective forests in 1933-37 was as follows:

PROTECTIVE FORESTS

Year (At the year end)	1933	1934	1935	1936	1937
Total				(Area in cho)	
Number	405,145	415,885	422,321	433,180	443,013
Area	ha. 2,078,522.78	2,089,401.95	2,122,633.6	2,135,437.9	2,143,554.4
Against soil-denudation					
Number	236,910	247,873	256,637	265,965	273,760
Area	ha. 905,430.25	911,327.28	924,786.9	933,159	938,844.7
For feeding springs					
Number	72,138	71,133	67,559	67,092	66,508
Area	ha. 980,990.98	982,608.16	994,611.9	998,080	998,633.0
Against flood					
Number	15,498	15,238	15,182	15,711	15,700
Area	ha. 10,967.50	10,879.14	6,516.5	6,526	6,532.0
Against rolling stone					
Number	485	481	476	474	485
Area	ha. 1,723.93	682.02	683.9	684	697.7
Against avalanche					
Number	4,899	4,958	4,942	4,968	6,116
Area	ha. 7,062.35	6,614.57	6,691.8	6,715	7,408.3
Against wind					
Number	13,736	13,940	14,410	14,892	15,524
Area	ha. 65,943.87	70,135.24	77,221.7	77,285	77,900.5
Against dust					
Number	10,869	11,221	11,346	11,598	11,586
Area	ha. 13,720.36	14,320.56	13,656.0	14,080	14,153.2
Against tide					
Number	13,260	13,637	14,369	15,137	15,959
Area	ha. 8,994.15	8,995.74	9,137.4	9,270	9,171.4
For attracting fish					
Number	25,853	25,867	25,904	25,893	25,947
Area	ha. 47,994.05	47,963.11	51,259.4	51,15	51,694.2
Landmark for navigation					
Number	253	259	259	257	258
Area	ha. 1,256.93	1,257.81	1,268.3	1,277	1,274.2
For maintaining public health					
Number	153	153	153	153	153
Area	ha. 89.36	89.26	90.0	90	89.7
For scenic beauty					
Number	11,091	11,125	11,084	11,040	11,017
Area	ha. 34,349.00	34,529.06	36,709.8	37,161	36,955.5

Owners of protective forests, etc., cannot, according to the provisions of the Forestry Act, cut down the trees, take the forest products from them nor utilize them for any purpose, unless with the approval of the authorities concerned. Protective forests are divided into two classes for administrative purpose. In the first class are forests in which limits for cutting and utilization are fixed, while in the second are those, the cutting of which is absolutely prohibited. Any owner who has his forest included in the second class and suffers any loss by this inclusion will have the loss reimbursed by the Government.

Utilization of Government Forests

Forests are classified according to ownership as Crown forests, Government forests, and public and privately

owned forests. Public and privately owned forests include those possessed by shrines and temples, public corporations and private individuals. Crown forests are those possessed by the Imperial Household and are divided into the hereditary and ordinary ones. Both are under control of the Minister of the Imperial Household, and are in charge of the Bureau of Imperial Forests and Estates. Government forests in Hokkaido are looked after by the local Government of Hokkaido, while those in Honshu (Main Island) are taken charge of by the Department of Agriculture and Forestry. Growth of forests, their utilization, and work of ensuring the public welfare through them are looked after by these offices, which administer them with rational plans for the public welfare.

The Government makes a contract

with people willing to carry on afforestation work whereby they are given not more than 80% of the total profit on condition that they follow the Government's instructions as to planting, supplementary afforestation work, and taking care of the trees planted. "Divisional Forests" may be established for this work. A portion of the Government's forests may be put into the custody of shrines and temples and any profits arising therefrom may be used by the shrines and temples. Such forests constitute "Forests in Custody." Sometimes the Government may appoint a particular city, town, or village to protect Government forests which are situated within the jurisdiction of that city, town or village, payment for the work being made by part of the products of that forest being handed over to the city, town or village (Commission forests). In addition, the Government may lease its forests for the purpose of the development of industry in a particular district, or for the purpose of assisting people living near the forests. In some cases no rent is charged. The ground may be used for grazing, grass, or gathering fuel. The Government may sell some of its forest land if it is suitable for reclamation. Forests which are used for these purposes are of a vast area. Figures for March, 1935 follow:

Protective forests	930,049 ha.
Divisional "	43,863
Forests in the custody of shrines and temples	25,584
Commission forests	55,998

Forests leased for industrial purposes	75,713
" for grazing	119,409
" as grass fields	162,338
" for gathering fuel	1,010,615
" " reclamation	23,602

Taxes cannot be imposed on Government forests which come within the area of any city, town, or village. But in view of the fact that it owes a great deal to the city, town or village for controlling and managing these forests, the Government has decided to pay to that particular city, town or village a sum equivalent to the amount of the local tax which those forests would bear if they were owned by private individuals.

Forestry Associations
(Shinrin Kumiai)

Forestry associations are those judicial persons recognized by the Forestry Act of 1907, which are formed not for profit but for safety of the country, conservation of water supplies, protection of forests, etc. The nature of their work is to allow members to plant, fell, carry, guard, or sell timber under unified control and rational management. Forestry associations are classified according to their objects into four classes, viz., foresters' associations, business associations, coolies' associations, and protection associations. The number of forestry associations in 1937 was 2,373, and the area covered was 1,922,002 cho. The growth of forestry associations in recent years is shown in the following table:

FORESTRY CO-OPERATIVE SOCIETIES

Year (At the year end)	(Area in cho)				
	1933	1934	1935	1936	1937
Total					
Number of societies	1,734	1,919	2,083	2,235	2,373
Area operated by societies	1,259,575	1,441,681	1,642,146	1,793,768	1,922,002
Number of members	243,753	278,111	325,172	359,048	389,921

Forest Damage and Insurance

Forests are subject to damage by fire, wind, snow, etc., damage and loss by fire being especially great. As the forestry business requires an investment which covers a long period of years it is essential to insure, for if a forest is swept by fire, not only the capital invested, but also the care and labour of many years is instantly swept away.

The table below shows both the amount of loss and the area damaged by fire, wind, etc., during the last few years. In order to encourage forestry work some means to minimize the loss which arises from fire had to be devised. For many years forest insurance was looked for but it was not until 1920 that the Toho Fire Insurance Co., Ltd., ventured to take on this business. The Teikoku Fire Insurance Co., Ltd., and

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Against flood					
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there are departments of general affairs, afforestation, vegetable pathology, utilization of forestry products, chemistry, forestry work, and weather and climate. Since 1904 it has regularly issued bulletins on experiments and forest weather, besides occasional other reports. The Station will, for payment, make analysis, carry out experiments and give advice and judgement on matters of forestry for the general public, if requested.

Local Experimental Stations Among the various prefectures Hokkaido is the only one which has a forestry experimental station. It was established in 1908 and for twenty-five years has contributed to the development of forestry in that island. The station makes experiments in afforestation, the utilization of forestry products and the protection of forests. In Kagoshima prefecture, a forestry research bureau was established in 1929. This bureau studies plant rearing, afforestation, etc. and is the only bureau which engages in experimental work in prefectures other than Hokkaido.

Forestry experimentation in Formosa is undertaken by a Forestry Bureau under the Central Research Station in the Government-General of Formosa. It has experimental forests of 52,000 cho. In addition to experiments in afforestation, utilization, and nursery work, it studies the classification and distribution of plants grown in the island. It has two branch stations.

The forestry experimental station in Korea was established in 1922. As the climatic conditions in Korea are rather continental the kinds of plants, their distribution, and the nature of forests, etc. differ widely from those in Japan, so the results of the experiments made in the Central Experimental Station in Tokyo cannot be directly applied to the forests in Korea. The station is comparatively new, but as part of a plan which is to be completed in fourteen years beginning 1925, in-

vestigations on the classification and distribution of plants, experiments in rearing and the planting of principal trees, experiments in the prevention of damage from noxious insects and fungi on young plants and forests, tests on lumber and methods of storing, etc., have already been made and reports on the results of the investigations and experiments have been published in the bulletins issued by the station. In the experiments on rearing young plants it has already succeeded in showing the way to quicken their growth, its experimental success in rearing the Korean pines being specially noteworthy.

In Saghalien Island an experimental station was established in 1929. Prior to that experiments were made on frigid zone plants by the Temporary Industrial Investigation Bureau in the Government Office of Saghalien Island in experimental forests near the towns of Toyohara and Horo.

Lumber Trade and Industry

Lumber Trade Imports of American lumber in 1938 amounted to ¥9,770,000. It was a great drop as compared with 1937 in which the amount reached ¥30,077,000. The main causes of the decrease were in the trade control of the Government. And the total amount of lumber imports reached ¥28,178,000, a decrease of ¥36,639,000 over the previous year.

Lumber Price The lumber market in 1938 extremely arose, because of the decrease of the imports of foreign lumber. January quotation of American lumber was ¥24.70 per shakujime (about 1 cubic foot×12), and it rose to ¥32.50 in July, then dropped to ¥26.13 in November and the year average was ¥28.45. The Saghalien timber was quoted at ¥970 per 100 koku (koku—about 1 cubic foot×10) in January, ¥1,130 in March, ¥1,100 in September, again ¥1,130 in December, and year average ¥1,084.

IMPORTS OF LUMBER (In ¥1,000)

Year	Ebony, Kwarin, etc.	Teak	Cedar for Pencils	Cedar, Pine, Fir from under 80 mm. thick to over 200 mm.	Cedar, Pine and Fir (logs (paulownia) and cants)	Kiri (ninja)	Aspen	Other Wood
1934	952	758	336	14,722	15,404	66	277	7,665
1935	967	1,347	364	16,533	20,230	83	304	9,945
1936	1,081	1,534	—	—	37,645	663	809	13,816
1937	815	2,852	—	—	41,640	821	727	17,962
1938	198	1,405	—	—	13,181	289	608	12,497

EXPORTS OF LUMBER (In ¥1,000)

Year	Bamboo	Railway Sleepers	Veneers	Shooks	Match Sticks	Wood Shavings for Match Boxes	Wood, Sawn	Logs, etc.
1934	952	2,207	4,010	5,779	255	402	6,620	4,639
1935	742	689	4,397	5,012	88	282	7,520	5,192
1936	895	699	5,965	4,672	377	273	9,146	3,371
1937	853	—	9,002	7,113	388	298	13,536	4,346
1938	—	—	6,064	6,745	662	509	17,825	14,358

Wood Pulp Industry

Demand for pulp in Japan during 1937 gained considerably over the year before, both production and imports increasing heavily over 1936, as mentioned in connection with rayon and paper manufacturing industries in other chapters.

The 1937 production of wood pulp in Japan was 829,684 metric tons, the timber consumed for the manufacture of pulp 8,667,899 koku. The amount of wood pulp imported amounted to 466,608 metric tons valued at ¥116,720,000. In 1938, it decreased to 144,724 metric tons valued at ¥41,059,000.

PRODUCTION AND IMPORTS OF WOOD PULP

	Production (In metric tons)	Imports
1933	620,039	159,974

	Production	Imports
1934	708,996	225,261
1935	757,477	269,853
1936	802,565	326,467
1937	886,978	466,608
1938 (estimate)	1,001,223	114,724

Promotion of the Industry The Board of Planning adopted a five-year programme for increase of wood pulp production in Japan and Manchoukuo in order to realize self-sufficiency in pulp in the country. According to the five-year programme the present productive capacity of 871,000 tons is to be expanded to 1,350,000 tons in Japan proper while the imports from Manchoukuo are to be increased from the present quantity of 13,200 tons to 300,000 tons by the end of 1942.

CHAPTER XVII

MINING

History of the Industry

During the reign of the Emperor Kotoku (645 A.D.), a mineral deposit was discovered in the province of Iyo and experts came over from Korea and China, to work the minerals extracted. Metals were being used for making coins, so mining received the encouragement of the rulers. During the time of the Emperor Shomu, (724-747 A.D.) mineral deposits were found in many places and the art of working them made considerable advance, a fact witnessed by the construction of the Great Buddha at Nara, a monument of the metal-working art of those days.

Later, during the time of the Ashikagas, mining made further development, especially in the field of gold, copper and sulphur. Influential lords who held sway in their own localities required metals to finance their army, and mines always proved good objects for fights. Mineral deposits obtained in this manner were well worked and the mining industry naturally developed.

In the time of the Tokugawas metal-lurgy further advanced. The government coined money which circulated all over the country and naturally the industry was well protected and carefully developed under its aegis. At this time Japan was known throughout the world as a country which abounded in gold and silver, and after the country was opened up to foreign trade the quantity of these precious metals exported was considerable, a business which provided a natural stimulus to gold and silver mining. The government also encouraged private enterprisers to engage in the industry, a result of which was the entry of the Sumitomos. The chief mineral deposits discovered during those times were:

Ashio Copper Mine in Tochi
 Besshi " " in Ehime
 Sado Gold Mines in Sado Island
 Milké Coal " in Fukuoka
 Karatsu " in Saga

After the Meiji Restoration the industry did not show much progress until after the Sino-Japanese War of 1894-1895, when the Government called in

many mining experts from abroad and employed them in government operated mines, not only to improve, organize and work the mines more efficiently but also to teach the operating of them on a modern basis. The mines improved in this manner were sold to private companies, and the experts who were officials of the Government were transferred together with them, a factor which served to bring the mining industry of Japan to its present stage of development.

In all kinds of mineral products, the year 1935 witnessed considerable increases over the preceding years. This was caused by the enormous increase of overseas trade and the continued boom of munitions industries. The year 1936 far surpassed the productions of the preceding years, setting an all-time record. An upward price trend caused miners to produce more than ever before.

Speaking of gold, the 1937 output totalled 13,184 kilogrammes in contrast to 21,114 kilogrammes for 1936. Silver production, too, decreased and amounted to 184,391 kilogrammes against 298,793 kilogrammes for 1936. Copper was not exception to the rule. Its output totalled 48,823 metric tons against 78,114 metric tons for 1936. Coal production totalled 24,278,000 metric tons against 38,067,000 metric tons for 1936. Petroleum products for 1937 totalled 2,272,631 hectolitres contrasted to 3,820,462 hectolitres for 1936. Production of sulphur totalled 140,502 metric tons, gaining over the 1936 figure of 175,314 metric tons. Production of lead was the largest known for recent years with a total of 5,521 metric tons against 8,021 metric tons for 1936. Demand for zinc became heavy with the progress of munitions industry. Last year's production totalled 26,835 metric tons in contrast to 36,201 metric tons for the previous year. Tin decreased somewhat and totalled 949 metric tons for 1937 against 1,859 metric tons for 1936. Throughout these two years the constant measures of encouragement of the Government and heavy demand for munitions industry provided the background for the large production.

MINE-LOTS

455

NUMBER OF MINE-LOTS PROSPECTED AND THEIR AREAS

(Prepared by Department of Commerce and Industry)

(Area is given in ares)

	1933	1934	1935	1936	1937
No. of Mine-lots	7,130	8,918	10,191	11,175	13,180
Area	130,743,419.5	171,271,346.3	197,668,056.0	216,727,000.0	266,205,444.1

Classified according to Kinds of Minerals

(Area is given in ares)

Kind of Mineral	1935		1936		1937	
	No. of Mine-lots	Area	No. of Mine-lots	Area	No. of Mine-lots	Area
Metal	7,001	128,256,535.3	7,731	140,850,104.8	9,100	172,101,997.1
Phosphorus	26	387,309.3	19	308,582.1	20	378,852.1
Graphite	27	344,311.7	30	375,819.0	25	224,956.0
Coal	1,863	42,904,085.3	2,015	46,668,887.4	2,390	58,048,328.0
Lignite	144	1,433,521.7	144	1,525,784.4	148	1,634,154.1
Petroleum	877	19,156,144.8	884	19,598,611.4	1,054	24,228,692.9
Petroleum asphalt	13	280,433.0	20	440,591.7	37	955,728.9
Sulphur	235	4,770,922.5	291	6,116,556.5	381	8,223,615.0
Total including others	10,191	197,668,056.9	11,175	216,726,569.1	13,180	266,205,444.1

NUMBER OF MINE-LOTS OPERATED AND THEIR AREA

(Prepared by Department of Commerce and Industry)

(Area is given in ares)

	1933	1934	1935	1936	1937
No. of Mine-lots Operated	1,241	1,395	1,448	1,613	1,863
Not optd.	3,067	2,915	2,888	2,764	2,544
Area Operated	22,175,416.3	23,723,094.7	23,874,047.0	28,874,000.0	28,384,319.7
Not optd.	22,608,207.5	21,678,168.5	22,267,615.0	22,587,000.0	19,832,958.5

Classified according to Kinds of Minerals

Kind of Mineral	1935		1936		1937		
	No. of Mine-lots	Area	No. of Mine-lots	Area	No. of Mine-lots	Area	
Metal	Operated	619	8,354,131	711	9,493,034	898	11,352,413.0
	Not optd.	1,572	10,092,320	1,468	9,400,913	1,305	8,289,501.9
Phosphorus	Operated	2	13,374	2	13,374	3	38,405.8
	Not optd.	7	46,661	7	46,661	6	32,796.7
Graphite	Operated	3	45,308	3	36,046	9	69,890.6
	Not optd.	12	40,890	14	51,004	5	15,250.7
Coal	Operated	545	12,921,417	596	13,375,035	630	14,033,213.9
	Not optd.	876	10,639,894	832	10,536,721	807	10,074,404.0
Lignite	Operated	102	574,388	103	565,712	98	552,953.8
	Not optd.	99	355,737	94	327,129	94	324,811.9
Petroleum	Operated	125	1,473,661	132	1,559,169	144	1,654,847.7
	Not optd.	256	800,910	249	787,268	240	717,410.3
Petroleum Asphalt	Operated	9	122,042	9	122,042	10	122,908.8
	Not optd.	3	2,958	3	2,958	2	2,092.8
Sulphur	Operated	39	329,975	45	428,808	58	498,620.1
	Not optd.	60	273,445	92	384,264	80	323,378.7
Total including others	Operated	1,448	23,874,047	1,613	25,669,510	1,863	28,384,319.7
	Not optd.	2,888	22,267,615	2,764	22,587,070	2,544	19,832,958.5

PRODUCTION OF MINERALS

		Japan Proper (Value, in yen)					
		1934		1935		1936	
Kind of Ore	Unit	Quantity produced	Value	Quantity produced	Value	Quantity produced	Value
Gold	Gramme	15,094,094	44,906,708	18,293,869	56,234,439	22,235,000	74,823,000
Gold dust	"	52,491	134,895	27,447	75,262	—	—
Platinum-dust	"	3,678	20,251	1,575	9,980	—	—
Silver	"	217,254,393	11,039,296	256,004,834	17,917,084	303,753,000	15,172,000
Silver dust	"	—	—	—	—	—	—
Copper	kg.	67,002,270	46,746,330	70,317,043	52,152,075	77,973,000	66,617,000
Lead	"	7,039,311	1,415,177	7,070,361	1,774,996	8,883,000	2,691,000
Bismuth	"	50,354	376,062	51,980	318,793	—	—
Tin	"	1,218,216	4,094,784	2,068,839	7,872,479	1,871,000	6,377,000
Tin dust	"	500	1,975	241	499,901	—	—
Tin ore	Metric ton	903	2,093,849	173	40,709	—	—
Antimony sulphide	kg.	—	—	—	—	—	—
Antimony ore	"	106	15,349	5,089	27,555	—	—
Mercury	Metric ton	6,772	32,639	3,888,710	1,318,678	—	—
Zinc	"	32,145,458	9,516,702	370,689	17,540,993	39,066	12,439,000
Cast iron	"	357,150	15,039,962	239,408	17,476,784	342,647	16,311,000
Steel	"	186,046	13,240,306	1,338,891	13,423,086	291,374	21,176,000
Iron pyrites	"	1,090,454	10,733,909	35,969	1,381,480	1,750,914	19,663,000
Chromite	"	27,070	993,550	71,659	1,370,671	—	—
Manganese ore	"	10,637	336,366	89	97,577	—	—
Dioxide Metal	"	46,528	572,524	6,435	13,357	—	—
Scheelite ore	"	65	82,381	2,889,144	461,226	—	—
Arseneous acid	kg.	2,734,331	322,792	91,248	1,158,372	—	—
Phosphate rocks	Metric ton	56,500	626,765	1,201	78,325	—	—
Graphite	"	969	48,931	—	—	—	—
Coal	"	35,924,989	245,555,471	37,762,491	270,177,016	41,803,000	305,537,000
Atan*	"	124,356	614,283	108,526	568,600	—	—
Crude Petroleum	hl.	2,838,630	9,429,848	3,509,568	11,985,514	3,907,000	15,529,000
Crude Oil	"	—	—	—	—	—	—
Gasoline	100 cm.	471,214	785,770	414,741	696,924	—	—
Sulphur	Metric ton	135,412	9,018,901	164,945	10,244,145	198,237	11,911,000
Sulphur ore	"	4,782	53,394	165,867	1,684,238	—	—
Sulphuric acid	"	118,459	1,068,993	2,582,437	699,429	—	—
Total		—	432,307,812	—	504,419,190	—	589,400,000

* Brown or soft lignite.

The amount of mineral production in 1937 is not made public. But there is no doubt about the fact that it must have reached over 800 million yen,

judged from the increase in the amount of taxes received by the Government from mining industry as it is shown below:

Year	Tax on Mineral Products	Special Tax on Mineral Products (In Yen)	Tax on Mine-lots	Total including others
1933	1,427,504	—	2,177,341	4,729,453
1934	1,701,007	—	2,600,445	5,886,661
1935	1,914,517	—	2,841,083	6,167,640
1936	2,204,200	—	3,071,534	7,112,929
1937	3,036,308	420,428	3,707,908	9,708,944

Mining of Metals

Gold Lacking natural resources, Japan today depends on importation from

foreign countries for a large number of materials for armaments, munitions and various capital goods. Semi-finished goods are particularly needed in con-

nection with defence-centred economy. However, the greater the importation of goods, the worse will become the already adverse international balance of trade. Hence, it is necessary to adopt feasible measures to maintain equilibrium in international accounts while attempting to import adequate amounts of goods needed. Promotion of the export trade constitutes one of these measures. Through concerted efforts on the part of the Government and the people, Japan's export business has continued to advance in the face of high tariffs, import quota systems and various other restrictive measures adopted by other countries. Simultaneously, the Government has introduced the Foreign Exchange Control Law, the Law Concerning Adjustment of Foreign Trade and Allied Industries and the Law Concerning Temporary Measures on Exports and Imports. Through these measures it has been attempted to adjust foreign trade by prohibiting or restricting imports of goods which have been considered unnecessary or non-urgent.

The remaining methods of bettering the international balance and maintaining the foreign exchange position of the yen on a sound basis is to replenish funds for settlement of foreign exchange, and one of the most effective measures is to increase the production of gold within Japan. The Government has made substantial appropriations for various gold production measures, notwithstanding the large expenditures required for other undertakings.

Since 1932, the Government has enforced many policies concerning gold: the purchasing of gold at current market prices; the reduction of railway freight rates on gold ore; the reduction of fees for analysing gold ore at the Bureau for Supervising Mines; the subsidization of construction of gold refineries, and the guiding of operations of gold mines on minor scales. As a result, the production of gold has increased considerably. In Japan proper alone, in 1936, it amounted to more than 22 metric tons valued at ¥74,820,000, whereas in 1931 only a little over 12 metric tons of gold valued at ¥16,500,000 were produced. Production in the Japanese Empire, including Taiwan and Chosen, which was about 22 metric tons, valued at ¥26,840,000 in 1931, increased sharply to more than 41 metric tons worth ¥138,560,000 in 1936.

However, even this latter amount is inadequate at the present time. The Government therefore promulgated the

Gold Production Law which went into effect on August 28, 1937, with a view to increasing production of gold in an aggressive manner and to concentrating the precious metal in governmental hands so that it may be utilized in equibalancing international accounts. In conjunction with the execution of this law, the Government is encouraging gold production with a sum of approximately ¥22,580,000 to be spread over five years from the 1937 fiscal year.

For the promotion of gold mining industry, the Government also introduced the Law Concerning the Japan Gold Production Promotion Company, Limited, at the 72nd session of the Imperial Diet in 1938. Approved by the Diet, the law was promulgated on March 29, 1938. The company organized under this law is a special semi-governmental corporation whose functions is to facilitate supply of abundant funds for gold mining enterprises and also to undertake various promotional enterprises in connection with the industry, such as the refining of poor ores.

On May 2, 1938, the Government raised its buying price of gold from the former level of ¥3.77 per fine gram to ¥3.85, the current level of the world gold market. On May 9, it abolished the gold buying commission which had hitherto been levied, and reduced by 50 per cent the rates of refining fees charged by the Mint on gold bullion to be sold to the Government, the rates of fees on certificates of the quality of gold bullion and those of fees on testing. At the same time, the buying commission on gold bullion in small lots below 50 grammes was abolished.

The essential points of the Gold Production Law may be listed as follows:

1. Persons desiring to engage in the business of gold refining and of buying minerals containing gold are required to secure licences from the Government.

2. Persons who have acquired minerals containing gold or alluvial gold or any substance containing gold are required to refine them into gold bullion and to sell the latter to the Government, or to sell them to licensed gold refiners or buyers of minerals containing gold. When these buyers have refined the bullion, they are obliged to sell it to the Government. Thus, all newly refined gold is to be concentrated by the Government, irrespective of the channels through which it may be obtained.

3. Gold refiners are required to formulate their plans of operation in advance and to report them to the Gov-

ernment. Reports are also required concerning changes in plants. The Government is authorized to order alterations in the plans of the refiners.

4. Whenever it is deemed necessary for the augmentation of gold production, the Government may, on the recommendation of the Gold Commission, command gold refiners to expand or improve refining facilities and may give necessary instructions concerning such facilities.

5. Owners of mining rights and rights on alluvial minerals containing gold shall be treated in the same manner as gold refiners, with respect to business operations.

6. When it is deemed necessary for the public welfare, the Government may, on the recommendation of the Gold Commission, issue orders to persons who are engaged in gold mining, gold refining and buying of minerals containing gold.

7. The Government is authorized to demand reports from gold miners, gold refiners and persons engaged in the business of buying minerals containing gold concerning their business methods and assets, and may also investigate such matters. The Government may further issue supervisory orders regarding the accounting methods of the above persons or may take the necessary action.

8. When it is deemed necessary, the Government may, on the recommendation of the Gold Commission, issue orders regarding the price of gold, restrictions on the use of gold and other matters relating to the consumption of gold. This provision has been put into force through Ordinance No. 60 Concerning Regulations on Gold Consumption of the Department of Finance, promulgated on December 28, 1937.

9. Machinery, tools or other materials necessary in the business of gold miners or gold refiners, when imported with the approval of the Government, shall be exempted from import duties for a period of five years from the day on which the Gold Production Law went into effect.

10. The Government may give subsidies to gold miners or gold refiners within the limits of the amount fixed in the budget.

Measures for encouraging the production of gold are roughly as follows:

1. To give subsidies to those prospecting for gold mines.

2. Subsidization of construction of facilities for selecting and refining ore. These measures are to be carried out

in accordance with the provisions of the Gold Production Law. Procedures relating to these measures are provided for in Ordinance No. 22 Concerning Gold Production Encouragement Regulations of the Department of Commerce and Industry, promulgated on October 10, 1937. Other measures are:

1. To subsidize expenses covering institutions for training the field staffs of gold mining companies.

2. To survey mineral deposits in gold producing areas.

3. To hasten the disposal of applications for gold mining licences.

4. To lend machinery and tools for gold mining.

A summary of the prospectus of the Japan Gold Production Promotion Company, Limited, is as follows:

1. Organization of the company: This company is to be a special joint stock company organized under a special law.

2. Purpose of the company: To conduct operations necessary for the promotion of gold mining and refining.

3. Capital: ¥50,000,000, of which ¥25,000,000 is to be invested by the Government. The capital may be increased on the approval of the Government.

4. Officers: (a) The company shall have a president, vice-president, three or more directors and two or more auditors. (b) The president and vice-president shall be appointed by the Government; their term of office shall be four years. Directors shall be appointed by the Government from among the shareholders of the company; their term shall be three years. Auditors shall be elected from among the shareholders at a general meeting; their term shall be two years.

5. Business: (a) Financing of and investment in gold mining and refining enterprises and in enterprises for the manufacture of gold mining and refining machinery and tools. (b) Gold mining and refining. (c) Buying and selling of gold mining and refining machinery and tools, and other materials or equipment. (d) Buying and selling of minerals containing gold. (e) Survey and valuation of gold mines.

6. Debentures: (a) The company is authorized to issue debentures under the name of the Gold Production Debentures up to an amount five times the paid-up capital of the company. (b) The Government may guarantee the payment of the principal of and interest on such debentures.

7. Dividends: (a) The company shall not be required to pay dividends on the Government-owned shares until

private shares have been satisfied to the extent of 4 per cent per annum. (b) In case the profits to be divided among shareholders reach a ratio exceeding 4 per cent per annum on private investments and the company intends to declare dividends at a higher rate, distribution of such excess profits may be made on the Government shares and private shares at ratio of 1 to 5, until the company becomes able to declare dividends of equal rates on both kinds of shares.

8. Subsidization of dividends: When the amount of profits to be distributed among shareholders fails to reach the rate of 4 per cent per annum on private investments, the Government shall subsidize the company with an amount covering the deficiency for the first year of its operation and for the subsequent five years. However, each subsidy cannot exceed the combined total of a sum equivalent to 4 per cent per annum on private investments and a sum of interest paid on Gold Production Promotion Debentures, with the exception of the first one.

9. Tax exemption: (a) The company shall be exempted from income tax and business profit tax for the first and the subsequent 10 business years. (b) No local taxes shall be levied on this company.

10. Subsidies: The Government may grant subsidies to the company principally for its enterprises relating to refining of poor ores.

11. Government supervision: (a) The Government is authorized to supervise the business of the company. The company is required to obtain approval from the Government regarding increase of capital, issuance of Gold Production Promotion Debentures, other borrowings, changes in the Articles of Corporation, disposition of profits, resolutions on amalgamation with other companies or dissolution, and business plans. (b) The company shall observe the Government's supervisory orders and orders necessary for the promotion of gold producing enterprises. (c) The Government shall appoint supervisors of the Nippon Gold Production Promotion Company in order to supervise the business of the company.

12. Regarding the organization of this company, the Government shall appoint an Organization Committee, which shall make all preparations and follow the necessary procedures.

The foregoing explanations apply to governmental policies in Japan proper. In Korea, the Decree on Gold Production was promulgated by Imperial Or-

dinance No. 16 of September 7, 1937. This Decree is similar in substance to the Gold Production Law of Japan proper. In Formosa, the Gold Production Law is to be enforced as in Japan proper in accordance with Imperial Ordinance No. 513 of September 25, 1937.

The Japan Gold Production Promotion Company intends to increase the production of gold throughout the Empire. It will conduct business in Korea and Formosa as well as in Japan proper.

Silver Affected by the bounds and leaps in the silver quotations in foreign markets and on account of the close relationship of silver with gold smelting the production of silver increased too, the 1935 production amounted to 256,004,834 grammes, which advanced to 303,753,000 grammes for 1936. Average silver price in 1937 in Osaka was ¥51.24 per kilogramme, a little cheaper than that of 1936 which was ¥51.85.

Tin Only about one-fourth of the total demand is being met by home products. To be exact 1,218,000 kg. was produced at home in 1934 against the total home consumption of 5,260,000 kg., leaving a balance of 4,062,000 kg. to be imported and 20,000 kg. for exports.

Osaka Tin Refinery Guild was established in October, 1933. The reproduced tin put out by the members of the guild became such an important factor that its manufacture came to be designated as one of the principal industries by the Government in November, 1934. The sales of the product have been well regulated after the formation of the guild. Before the guild was organized the product contained a good deal of impurities and the production was only two or three hundred tons. As the time went on the technique of refining improved and the production in 1934 went up to five hundred tons. All the product is consumed in the domestic market, the average price in 1937 being ¥527.95 per 100 kilogramme in the Osaka market.

Copper Production of copper, unlike that of tin, lead, zinc, or aluminium, was comparatively large in Japan, occupying an important position among metal industries, especially in arms industry. Copper industry developed rather early in Japan. Its production in 1876 was less than 4,000 tons, but Japan was then known throughout the world as the second largest copper producing country, exporting one half of her product. But with the Great War as the turning point, her position as copper exporting country became less important, for new copper beds were discovered in Chile and Congo. Japan then came to occupy the fourth position

in the production of copper, and has been compelled to become an importer, the quantity imported increasing every year.

Demanding as an indispensable requisite in the munition manufacturing industries its brisk tone was maintained in 1934 as it had been in the previous year. The 1936 copper output in Japan established a record high with 77,973,000 metric tons in contrast to 69,829 metric tons for 1935. The copper market in Japan was long under influences of New York and London markets. But since the second half of 1932, owing to the depression of the yen and the increased tariff, it began to regain an independent position of foreign influences. Copper prices in Japan for 1936 were unusually

high affected by New York and London quotations. Last year's low was ¥79.65 on January 13 and high was ¥107.35 on December 4. The range was ¥27.70. In 1937, the average price of electrolytic copper rose to ¥139.96, a record high. The exports of copper reached 211,554 piculs valued at ¥15,105,000 for 1937 and 113,456 piculs valued at ¥8,636,000 for 1938.

To meet the enhanced demand copper mines extended their equipments, the most important being the improvement of the furnace at Naoshima refinery of the Mitsubishi Mine, the extension of Saga refinery of the Nippon Mine, and opening of a new shaft at Ashio Mine of the Furukawa interests.

SUPPLY AND DEMAND OF COPPER (Kilogrammes)

	Production	Imports	Total	Exports	Home Consumption
1932	71,876,557	1,966,600	73,843,157	23,121,600	50,721,557
1933	69,032,756	17,617,700	86,650,456	8,512,100	78,138,356
1934	67,002,270	51,368,300	118,370,570	12,621,600	105,748,970
1935	69,407,000	65,261,000	137,441,000	72,000	134,170,000
1936	78,614,000	47,704,000	129,607,000	7,000	127,524,000

Lead The home production of lead barely satisfies 7% of the aggregate demand. In 1936 the total home production was 8,883 metric tons, and the import was 97,822 metric tons.

Zinc The origin and development of zinc mining in Japan is of comparatively recent date. In 1900, a Swiss clock firm, seeing bright prospects of developing the industry, purchased many zinc mines in the country and began exporting the metal. From this time the industry developed, the number of men engaged in mining increased, and the exportation of zinc grew in proportion.

Along with the development of other industries has been an advance in zinc smelting. With increased demand during the World War, production and exports increased, the quantity produced in 1917 reached 54,700 metric tons, and smelting furnaces numbered 16. From the slump of 1920 and the depression which followed it, the industry received a heavy blow. Most of the furnaces were shut down, and only those in Miké, Takata, and Hiroshima were able to weather the storm. The last named

has been especially successful in manufacturing sulphuric acid with the sulphur separated from zinc ores.

Zinc ores in Japan exist mainly in igneous and aqueous rocks. They seldom exist independently, sometimes being found mixed with lead ores. The principal ore which yields zinc is zinc sulphide, some of the best of which contains about 67% of zinc and 33% sulphur. Ordinary ores contain 40 to 55% of zinc and 24 to 28% of sulphur. The principal places of production are as follows:

Kamitoka	Kozan in Gifu Prefecture
Budé	" " Niigata "
Ikuno	" " Hyogo "
Yasuda	" " Nagasaki "
Hosokura	" " Miyagi "
Kanayama	" " Wakayama "
Wanibuchi	" " Shimané "
Sasu	" " Nagasaki "
Ginya and Maden	Kozan in Keiando, Korea
Mimuné	Kozan in Keiando, Korea.

The production, import, export, and consumption of zinc follow:

Year	Production		Imports	Exports	Consumption
	Quantity produced	Value			
	kg.	yen	kg.		kg.
1931	25,407,089	4,471,742	24,633,600	—	50,040,789
1932	27,043,432	6,032,611	26,571,600	—	52,615,032
1933	30,657,632	9,746,995	32,525,600	—	63,183,232
1934	32,145,458	9,516,702	33,208,100	—	65,353,558
1935	34,191,000	—	45,842,000	—	80,034,000
1936	39,066,000	—	61,774,000	—	97,975,000

Iron and Steel Industry

Down to the Meiji Era The art of iron smelting is said to have been known even in prehistoric times in Japan, but no reliable record can be found. The granites found in large quantities in the Chugoku districts, i.e. Okayama, Hiroshima, Tottori, and Shimané prefectures were found to contain a good percentage of magnetite iron from which iron dust was extracted. These places became famous for their iron products and swordsmiths. In the middle of the 19th century, there were as many as 300 smelting works in these districts, but before the Restoration the utility of iron was not well realized and the demand for it was naturally small. Therefore, the iron and steel industry in its modern garb can be said to have begun with the Restoration.

Since the Restoration Early in the Meiji Era, mines were mostly operated by the Government. As the iron and steel industry was considered very important from a military standpoint the Government placed Kamashi mine in Iwaté prefecture, under its direct management, and established there some smelting works with foreign experts called from abroad. In 1879, two furnaces with capacity of 25 tons each were installed, but, owing to a shortage of raw materials and fuels the enterprise failed.

After the Sino-Japanese War of 1894-1895, the necessity of establishing the iron and steel industry for manufacturing war supplies was very keenly felt, and the Yawata Iron Works was established in 1886. Owing to the increased demand for iron and steel by various expanding industries the Yawata Works were extended in 1906 and again in 1911.

Private iron and steel works have since been established in rapid succession. In 1905, Suzuki Shoten of Kobé established Kobé Seikojo, and in 1907, Nippon Seikojo was established at Muroran with English and Japanese capital. In 1912, Nippon Kokan Kaisha, Ltd., was established, while in Manchuria, Honkeiko Baitetsu Koshi was established in 1910 on joint account of Japan and China.

These iron and steel works expanded tremendously during the World War, and production increased with marvelous rapidity. The 1913 production of pig iron was 240,000 metric tons while the 1918 production had increased to 583,000 tons. During the same period the production of steel increased from

255,000 tons to 537,000 tons. The Mitsubishi Co. established their Iron Works in Kenjiho, Korea, about this time.

Perhaps the iron and steel industry received a heavier blow than any other from the slump of 1920, a blow that was intensified by the decisions reached at the Disarmament Conference of 1921. The price of pig iron fell from ¥541 per ton, the highest price, in July of 1918 to ¥65 per ton in 1921, steel bars fell from ¥451 to ¥132, and steel sheets from ¥1,285 to 199. Twelve pig iron manufacturing companies, four steel manufacturing companies and six steel materials manufacturing companies went out of business. Many small companies were amalgamated with or absorbed by bigger ones, until at present the whole iron and steel industry is controlled by a few powerful houses, Mitsui, Mitsubishi, Sumitomo, Okura, Asano and Okawa.

Many new industries were started during the Great War and as they progressed their demand for iron and steel expanded. Production increased to meet this demand and the 1923 output was greater than at any time during the Great War. The industry received blows from the great earthquake of 1923 and the financial panic of 1927, but with the finances of the largest concerns of the country behind it readjustments were soon made and as demand increased the industry steadily developed.

Iron Industry in 1937

Iron industry in the country and foreign trade of iron and steel have been put under a strong Governmental control since the outbreak of the China incident in 1937, by the enactment of the Iron Manufacturing Industry Law which was passed at the 71st session of the Diet in the summer of that year. The new law, while exempting all iron manufacturing concerns in the country from taxation makes it compulsory for them to ask the permission of the Government for any changes in their working programme, and enables the Government to order the necessary changes.

In April 1937 the Minister of Commerce and Industry announced a scheme for abolishing customs duties on imports of pig iron for a year and increasing the annual production of pig iron to 5,600,000 tons and that of steel to 6,000,000 tons by the end of 1941. Accordingly, the expansion scheme of the Japan Iron Manufacturing Company was to continue for several years to come and new furnaces

were to be installed in Hyogo and Korea while its existing factories were to be greatly expanded. But the occurrence of the China incident expanded the requirements and the Konoé Cabinet which came to power in June, 1937, drew out a five-year programme for expanding the production of iron in order to realize an annual output of steel amounting to 10,000,000 tons in Japan and Manchoukuo combined. To increase the supply of steel for special purposes the curtailment of the production of iron bars and rods for peacetime enterprises was enforced as from October, 1937. At the same time regulations governing all factories using iron and steel were issued, and Governmental license was made necessary for any building in which more than 50 tons of iron bars and rods are used, the law coming into force on October 20, 1937. The supply and demand relations are also brought under a thorough Governmental control. All phases of iron and steel manufacturing industries and trade are kept in secret since the second half of 1937.

Steel Competitive rearmament programmes adopted by the leading countries of the world have resulted in a remarkable increase in demand for steel and the steel manufacturing industry in Japan has been witnessing unprecedented activity, as shown in the following table. The production in the latter half of 1937 is not made public, but it may be safely said that it reached an amount far surpassing the corresponding period of 1936.

SUPPLY AND DEMAND OF STEEL

	(In 1,000 tons)			
	Production	Imports	Exports	Domestic consumption
1936				
First half	2,066	144	223	1,987
Second half	2,514	141	195	2,460
Total	4,580	285	419	4,446
1937				
First half	2,454	294	212	2,535

Pig Iron and Waste Iron The problem of increasing the production of pig iron had been a long-standing one in Japan, and after the Hirota Cabinet came into power in 1936 it was became the subject of one of the most important policies of the Government. Installation of additional furnaces was encouraged and exemption of pig iron from customs duty was proclaimed. Early in 1937 the Hayashi Cabinet established a scheme for increasing the

annual production of pig iron to 5,600,000 tons by the end of 1941. The Japan Iron Works made preparations for increasing production in conformity with the Governmental plan and, at the same time, succeeded in concluding a contract with American companies for the importation of pig iron amounting to 150,000 tons during 1937. According to the Japan Iron Works' plan the production of pig iron in 1937 was to increase by some 500,000 tons, the amount of supply expected being 3,700,000 tons or an increase of 15 per cent over the previous year. Actual production and imports of pig iron in 1936 and 1937 was as follows:

PRODUCTION AND IMPORTS OF PIG IRON IN 1936 AND 1937

	(In 1,000 tons)			
	Production		Imports	
	1936	1937	1936	1937
January	233	191	62	65
February	220	185	71	56
March	229	228	91	57
April	231	231	85	54
May	241	230	94	64
June	231	212	101	102
July	239	—	67	117
Total for the year	2,869	—	978	—

Note: Figures for production have not been published since July and those for imports since August.

The imports of waste iron amounted to 1,356,000 tons in the first 7 months of 1937. Figures for the rest of the months of that year are missing, but the fact that those for the first 7 months alone were getting close to the total of the 12 months of the previous year indicates the increased activity of steel manufacturing industry in 1937.

IMPORTS OF WASTE IRON IN 1936 AND 1937

	(In 1,000 tons)	
	1936	1937
January	47	74
February	56	94
March	72	84
April	72	136
May	119	223
June	118	356
July	164	409
Total	648	1,356
Total for the year	1,497	—

Iron Ore Deposits in Manchoukuo and North China Iron ore deposits in Ja-

pan proper and Korea are estimated at 200,000,000 tons and the domestic supply of iron ore meets but 24 per cent of the demand the remaining 76 per cent coming from abroad. With the increase of output in Manchoukuo Japan may reduce imports of the metal from Western countries to 50 per cent of the demand. The percentage is hoped to diminish still further with the exploitation of iron resources in North China. The total iron ore deposits in China and Manchoukuo were estimated at 1,000,000,000 tons according to "An Outline of Mining Indus-

try in China," or 555,000,000 tons according to the "Iron Ore Deposits and Iron Industry of China" by F. R. Te-gengren, and approximately 90 per cent of which is in the five provinces of North China and Manchoukuo. The quality of these ores is said to be poor and the results of their exploitation are regarded very uncertain. Nevertheless, Japan may be able to get a good supply of iron ore from these districts for years to come through the efforts of skilful engineers and the application of modern scientific methods.

SUPPLY AND DEMAND OF IRON ORES IN JAPAN PROPER

(In metric tons)

Year	Amount produced	Amount imported	Amount imported from Colonies	Amount exported to Colonies	Demand	Percentage of Production to Demand
1930	245,991	1,973,659	278,727	2,466	2,504,900	21%
1931	208,181	1,549,919	176,585	5,176	1,929,509	20
1932	226,722	1,482,409	151,603	4,200	1,856,400	20
1933	320,670	1,523,627	255,320	5,600	2,093,900	28
1934	431,600	2,131,916	180,500	5,500	2,738,500	22
1935	515,800	3,404,099	242,100	5,700	4,156,400	18
1936	620,400	3,780,100	242,700	—	4,643,200	19
1937 (up to July)	—	1,856,800	1,009,700	—	—	—

Pig Iron Pig iron is produced by Nippon Seitetsu Kabushiki Kaisha (Japan Iron Manufacturing Company). Coke is mostly used in its production, the amount produced with charcoal be-

ing so small that it is hardly worth mentioning. The amount of production classified according to the mode of production and raw materials from which it is produced is as follows:

Year	From Iron Ore		Reproduced	From Ores	Total
	With Coke	With Charcoal			
1927	884,341	—	10,905	925	896,171
1928	1,077,065	381	14,237	853	1,092,536
1929	1,065,908	2,000	19,138	82	1,087,138
1930	1,136,853	241	24,743	57	1,161,894
1931	896,445	—	20,897	—	917,342
1932	993,447	1,253	15,837	224	1,010,761
1933	1,403,502	—	19,924	463	1,423,889
1934	—	—	—	—	1,728,100
1935	—	—	—	—	1,906,700
1936	—	—	—	—	2,007,500

During the war, Japan had the bitter experience of having her supplies of iron and steel cut off from Great Britain and the United States of America, and in view of this the Nippon (then Yawata) Works has steadily extended its production capacity. The 1930

production was 2.5 times that of 1919. Japan requires about 1,500,000 tons of pig iron every year. Her own production is not enough to meet this requirement and the shortage is filled by importing from Korea, Manchoukuo and India.

PRODUCTION OF PIG IRON IN JAPAN AND MANCHOUKUIO

Year	(in metric tons)			Total
	Production in Japan Proper	Production in Korea	Production in Manchoukuo	
1929	1,087,128	153,627	295,380	1,536,135
1930	1,161,894	349,415	150,524	1,661,833
1931	917,342	147,257	342,270	1,406,869
1932	1,010,761	161,940	368,181	1,540,882
1933	1,423,889	161,163	433,523	2,018,575
1934	1,714,417	175,502	471,715	2,361,634
1935	1,906,787	147,774	—	2,999,328
1936	2,007,500	—	649,800	3,102,400

SUPPLY AND DEMAND OF PIG IRON IN JAPAN

	(in metric tons)			
	1934	1935	1936	1937
Production in Japan Proper	1,728,100	1,906,700	2,007,500	—
Imports from Ceylon, Manchoukuo and India	778,400	1,092,500	1,094,800	583,200
Total supply	2,506,700	2,999,300	3,102,400	—
Exports to colonies	800	—	—	—
Demand in the country	2,501,300	2,998,000	3,101,500	—
Percentage of production to demand	92%	81%	77%	—

Steel and Steel Materials Steel ingots are produced mostly from pig iron, principally by the open-hearth process. The Bessemer process is sometimes employed by small mills, but the number of mills which use either this or the

crucible method is small. Recently the electric process of production has been gaining ground. The amount of steel produced by different methods are shown below.

PRODUCTION OF STEEL INGOTS (in metric tons)

Method of Production	1929	1930	1931	1932	1933	1934	1935	1936
Open hearth	2,238,198	2,225,451	1,828,823	2,325,306	3,456,347	3,633,610	4,459,737	—
Bessemer	1,210	35	—	940	—	—	—	—
Electric	52,654	62,140	52,765	69,740	137,600	208,790	241,649	—
Crucible	1,778	1,711	1,537	2,296	2,192	1,120	1,200	—
Total	2,293,840	2,289,337	1,883,125	2,398,282	3,596,139	3,843,520	4,702,586	—

Total production in Japan proper and Korea for 1936 was 4,914,000 metric tons.

PRODUCTION OF STEEL MATERIALS

CLASSIFIED ACCORDING TO KINDS (in metric tons)

	1929	1930	1931	1932	1933	1934	1935	1936
Round bars	683,841	483,556	467,333	568,446	846,997	778,451	1,015,744	1,582,133
Square "	255,553	250,753	202,509	252,402	331,439	430,321	467,836	—
Thin plates	543,948	570,603	560,056	608,893	747,138	910,137	1,102,249	1,397,881
Steel pipes	78,492	88,336	63,491	95,890	117,287	136,969	166,682	188,659
Rails and fish plates	271,324	289,596	110,338	233,502	271,982	368,199	366,744	288,576
Wire rods	68,471	122,428	176,561	215,250	285,013	347,548	412,600	487,162
Black sheet	—	—	—	—	35,989	61,161	94,920	139,417
Others	26,048	31,709	21,513	36,724	53,110	63,522	107,994	—
Total	1,927,677	1,837,081	1,601,800	2,011,107	2,688,955	3,096,308	3,734,791	—
Wrought Steel materials	36,450	26,895	16,593	31,917	63,709	71,145	72,030	—
Cast steel	49,224	38,661	30,532	42,684	61,043	79,819	100,444	—
Special steel materials	18,529	18,429	13,931	27,929	49,448	57,912	72,088	—
Grand total	2,033,880	1,921,066	1,662,858	2,113,637	2,863,155	3,305,184	3,979,353	4,538,626

The annual requirement of steel materials in Japan is about 3,500,000 tons. The production in the country has greatly increased of late and in 1935

and 1936 it was able to meet the domestic demand. The following statistics show how the demand is met.

SUPPLY AND DEMAND OF STEEL MATERIALS (in metric tons)

	1931	1932	1933	1934	1935	1936
Production	1,662,858	2,113,637	2,863,155	3,805,184	3,976,000	4,538,500
Amount imported	265,548	235,165	409,862	426,658	357,100	344,900
Total supply	1,928,406	2,348,802	3,273,017	3,731,842	4,333,300	4,883,500
Amount exported	203,547	299,867	435,297	254,955	811,100	887,900
Home consumption	1,724,859	2,048,935	2,837,720	3,476,887	3,522,200	3,775,600
Percentage of production to consumption	96	103	101	95	114	115

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 ¥35,359,984.

The year 1936 was the most prosperous year for the coal industry. Details follow:

SUPPLY AND DEMAND OF COAL

(In metric tons)

	1935	1936	1937	1938
Coal actually marketed	37,762,000	41,000,000	38,941,000	42,495,000
Coal imported	4,049,000	4,189,000	4,429,000	3,741,000
Coal stocks at the beginning of	657,000	722,000	—	—
Total coal supply	42,468,000	45,911,000	—	—
Coal exported	1,019,000	1,112,000	1,024,000	769,000
Coal stocks at the end of	722,000	698,000	—	—
Coal demand in Japan Proper	40,727,000	44,101,000	42,607,000	45,477,000

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	27,987
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	41,803

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

Year	No. of companies	Authorized capital (In yen)	Reserve fund	Net Profit	Dividend	Net loss	
				(In yen)			
1928	105	386,413,700	26,868,288	1928	11,711,498	7,142,008	13,011,829
1931	87	865,800,700	30,149,827	1931	4,424,070	4,183,130	5,654,419
1934	113	470,097,200	60,394,926	1934	30,716,855	19,847,553	995,199
1937	184	620,964,906	85,004,467	1937	50,082,609	31,368,706	2,342,734

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	Bitumin- ous 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	454,745	5,439,905	65,765	5,960,415	36
Actual deposits	131,944	3,780,975	132,582	4,045,501	24
Probable 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	822,000	75,770	897,770	10
Actual deposits	2,940,000	205,000	3,145,000	34
Probable 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 2,600,000 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	1,264 "	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

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 1936 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 (in case)	2,378,000	17,165,000	19,543,000	19,250,000
Kerosene Oil	1932	244,758	579,299	824,057	700,500
	1933	208,660	589,694	798,354	576,510
	1934	206,700	709,780	916,480	877,780
	1935	296,500	828,600	1,125,100	933,560
	1936 (in case)	1,228,000	2,063,000	3,831,000	2,526,000
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 (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	389,620
	1935	743,510	1,631,610	2,375,120	425,290
	1936 (in case)	1,815,000	4,985,000	6,800,000	1,787,000
Heavy Oil	1932	205,354	507,623	712,977	12,996,530
	1933	214,203	1,062,168	1,276,371	13,016,430
	1934	376,020	1,870,990	2,247,010	16,165,550
	1935	853,190	2,438,240	3,291,430	20,959,990
	1936 (in case)	3,659,000	8,295,000	11,954,000	35,463,000
Total	1932	2,324,227	6,809,328	9,133,555	18,452,360
	1933	1,830,944	6,146,102	7,983,046	18,459,940
	1934	2,188,080	10,111,170	12,299,250	22,938,240
	1935	2,939,230	11,425,320	14,364,550	28,244,280
	1936 (in case)	10,455,000	35,837,000	46,292,000	59,248,000

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
	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	49.0
	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	60.3
	1934	1,794,260	44,320	1,749,940	52.0
	1935	2,058,660	110,890	1,947,790	58.0
	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 (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	288,640	2,454,680	96.0
	1935	2,800,410	270,540	2,529,870	94.0
	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	3.9
	1934	18,412,560	—	18,412,560	12.0
	1935	24,251,420	—	24,251,142	14.0
	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 (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)						
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	96,981,747	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	141,904,183	98,089,442	63,862,501	3,250,888
1936	697	1,418,426,003	170,580,240	113,489,849	69,684,072	8,916,621
1937	836	1,758,504,011	210,737,740	131,457,216	85,221,659	7,027,587

MINING COMPANIES BY KINDS IN 1937

(Prepared by the Department of Commerce and Industry)

Kind of Mining	Number	Amount Invested and Authorized Capital	Reserve	Net Profit (in yen)	Dividend	Net Loss
Metal	298	879,704,717	73,724,015	62,086,186	41,585,974	3,833,579
Coal	184	620,964,906	85,004,467	50,082,609	31,368,706	2,342,734
Petroleum	33	177,340,000	47,396,120	14,556,197	9,097,706	49,988
Others	42	41,222,000	3,681,477	3,714,906	2,457,058	227,461
Stone	279	39,272,388	931,661	1,017,318	712,215	573,825
Total	836	1,758,504,011	210,737,740	131,457,216	85,221,659	7,027,587

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		Total
	Male	Female	Total	Male	Female	
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	6,870	694	7,574	212,351	23,996	236,347
1935	7,517	780	8,297	232,026	25,389	257,415
1936	—	—	—	249,182	25,512	274,694
1937	—	—	—	311,390	54,781	366,171

Note: Figures for 1936 are the results of actual spot investigation on October 10.

CHAPTER XVIII

THE TEXTILE INDUSTRY

The number of operatives, mills, etc. for almost all kinds of textile industry in 1937 showed an increase over those of 1936, 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 1937 AS COMPARED WITH THOSE IN 1936

Kind of Industry	No. of Mills		No. of Mills using Motors		No. of Officials		No. of Technician	
	1936	1937	1936	1937	1936	1937	1936	1937
Silk reeling	2,637	2,006	2,496	1,908	4,962	4,652	5,137	4,328
Spinning	638	782	633	773	4,325	4,428	3,440	3,485
Twisting	1,726	2,081	1,699	2,039	525	545	310	320
Weaving	15,028	16,034	14,163	15,125	6,775	7,303	4,668	4,472
Hosiery	1,679	1,960	1,451	1,650	1,088	1,113	634	627
Dyeing, refining, bleaching, assorting	3,307	3,680	2,483	2,701	4,029	4,170	2,544	2,561
Miscellaneous	1,343	1,590	1,217	1,432	1,000	1,193	456	589
Total	26,258	28,133	24,142	25,628	22,704	23,354	17,189	16,382

Kind of Industry	No. of Operatives				Others		Total Workers	
	Male		Female		1936	1937	1936	1937
Silk reeling	20,093	17,205	231,700	207,200	4,381	4,138	266,273	237,523
Spinning	36,661	34,360	223,682	229,353	8,439	8,974	276,547	280,600
Twisting	5,439	5,433	19,880	18,873	291	343	26,445	25,514
Weaving	64,888	64,989	300,219	315,300	4,796	5,536	381,346	397,600
Hosiery	9,595	10,029	17,306	20,477	372	403	28,995	32,649
Dyeing, refining, bleaching, assorting	59,644	60,725	13,409	15,687	2,195	2,304	81,821	85,447
Miscellaneous	7,349	8,614	18,052	24,265	404	639	27,261	35,250
Total	203,669	201,355	824,248	831,155	20,878	22,337	1,088,688	1,094,583

Note: Figures are for the factories where more than 5 operatives are employed. Source: The "Factory Statistics".

Cotton Industry

The control imposed on imports of raw cotton necessitated a curtailment of over 43 per cent in spinning industry during 1938, and as a result, the exports of cotton tissues dwindled to 2,180,000,000 square yards, a decrease of 462,000,000 square yards or 17 per cent as compared with the previous year.

Business Results According to the report of the Japan Cotton Spinners' Association on the business results of 76 member companies for the first half of 1938 the paid-up capital reached to ¥604,629,000, and the shares and loans

increased by 9 million yen 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.

BUSINESS RESULTS OF COTTON SPINNING COMPANIES IN JAPAN PROPER

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

(In ¥1,000)

	First Half, 1937	First Half, 1938
Paid-up capital	512,988	604,629

	First Half, 1937	First Half, 1938
Reserves	287,603	302,525
Debentures and debts	205,621	214,863
Fixed assets	732,392	792,225
Net profits	47,081	49,196
Rate of profit	18.4	16.2
Rate of dividend	12.4	12.9

The Cotton Industry in North China According to the 1937 statistics the area of land used for cotton cultivation in China totalled 3,500,000 hectares and production of raw cotton amounted to

14,000,000 tan (1 tan equals 60 kilograms) an amount which is equivalent to 12 per cent of the world's total production, and next to the United States and India in rank. The three provinces of Hopei, Shantung and Shanhsi are the main producing centres of North China whose average annual production is about 3,770,000 tan or 36 per cent of China's total. The area of land under cultivation and the cotton production of these three provinces for the past five years ending in 1936 are given in the table below.

CHINA'S COTTON CULTIVATION AND NORTH CHINA'S POSITION

Year	Land Under Cultivation (1,000 mu)			Cotton Production (1,000 tan)		
	China	3 Provinces of North China	Percentage of North China	China	3 Provinces of North China	Percentage of North China
1932	37,099	12,288	33.1%	8,160	3,206	38.3%
1933	40,454	12,790	31.6%	9,774	3,416	34.9%
1934	44,971	15,096	33.6%	11,203	4,771	42.6%
1935	35,026	9,185	26.2%	8,143	2,826	34.7%
1936	55,041	17,685	32.1%	14,430	4,750	32.9%
Average for five year	42,518	13,409	31.2%	10,331	3,774	36.5%

1 mu is equivalent to 1,000 square metres. Statistics from S. M. R. North China Office, Hokushi Bosekigyo Kiso Shiryo (Source Book on the Spinning Industry in North China), 1938.

The question of increasing cotton production in North China has long been a matter of deep concern on the part of the proper authorities. Deliberations on the question have been going on for some time between the Provisional Government of Peking and the Japanese both of whom are represented in the Japan-China Economic Council, but of late cotton has been recognized "as a profitable agricultural product for native farmers and an important raw material for Japan." In line with this conclusion a policy for increasing production was adopted, execution of which will begin with the present year. The main points embodied in this plan are as follows:

1. In North China a plan calling for increasing cotton production to 10,000,000 tan per annum at the end of a period of 9 years beginning with 1938 will be carried out.

2. The area of land allotted for cotton cultivation will be increased to 30,000,000 mu. Much care will be taken to prevent the decrease which might occur in the cultivation of wheat and other grains in enlarging the area for cotton cultivation.

3. King's Improved and Tries will be selected for encouragement together with superior native varieties.

Parts of the plan to be carried out each year are given in the table below.

PROJECTED COTTON PRODUCTION FOR EACH YEAR

Year	(In 1,000 tan)		Total
	American Variety	Native Variety	
1938	2,246	1,958	4,204
1939	2,499	2,154	4,653
1940	2,803	2,369	5,171
1941	3,470	2,357	5,827
1942	4,199	2,343	6,542
1943	5,070	2,327	7,397
1944	5,972	2,310	8,282
1945	6,837	2,359	9,196
1946	7,665	2,335	10,000

The following are the points which will be carried out in the fulfillment of the policy.

1. To increase and encourage the cultivation of superior varieties.
2. To advance loans for the establish-

ment of irrigation facilities.

3. Establishment of publicity and encouragement organs.

4. Strengthening of the supervisory system.

5. Improvement of farming methods and the eradication of pests and plant diseases.

6. Readjustment of land leases for small tenant farming, improvement of transportation facilities, rationalization of transportation rates, readjustment of the customs, encouragement of immigration, and the encouragement for increasing the production of foodstuffs.

The total estimated expenditure needed to carry out the Nine-Year Plan is approximately 29,128,000 yuan, while the establishment of irrigation facilities will require an additional 72,362,000 yuan which will bring the total well up to the 100,000,000 yuan mark.

Upon realization of the Plan cotton production subsequently boosted to 10,000,000 tan per annum, this amount will be apportioned as follows:

3,500,000 tan to be consumed by the spinning industry of North China which will have by then a total of 1,300,000 spindles.

Other local consumption—1,000,000 tan. Upon the revival of the spinning industry, Central China is expected to demand 2,500,000 tan, leaving 3,000,000 tan available for exporting to Japan.

Encouragement and Experimental Facilities. With the unrestricted support of the Japanese authorities, the Provisional Government of Peking is working assiduously to complete its organization for the encouragement of the cotton industry, and other organs connected with the cotton policy. The various organizations are outlined briefly below.

1. North China Cotton Industry Association. The membership of this organization is composed of prominent Hopei, Shantung and Shanhsi men in the cotton industry and reorganized groups of provincial cotton encouragement organs, and has its headquarters in Peking. For some time in the past the Provisional Government has given assistance in the promotion of enterprises, financing and supervision in Shantung, Hopei and Shanhsi Provinces. This organization is semi-official in nature and is a juridical person of the Chinese Republic. Its capital is subscribed jointly by the Government and by the Japan-China Spinners' Association. It has invited Japanese experts to supervise cultivation, improve quality and to increase output. Through

the Rural Agricultural Associations it distributes seeds of improved varieties, supervises cultivation and makes advances to those in need of funds.

2. North China Company. This organization was formed at Tientsin last spring as a cotton purchasing firm under the joint auspices of the Japan-China Spinners' Association and the Cotton Industry Association. At present it owns three press factories and engages in the distribution of seeds and the financing of rural cotton raising communities, but since its small capital of 3,000,000 yuan tends to limit its sphere of activities preparations to increase it to 60,000,000 yuan are now under way.

Agricultural Experiment Stations in North China. The experiment stations dealing with cotton and other agricultural products that have existed from pre-China Incident days are listed in the following paragraphs.

1. Tsung-hsien Cotton Experiment Station. This experiment station is located to the east of Peking and was founded by Yin Tung, chief of the former Pei-Ning Railway Bureau, who with the assistance of the Japanese (especially Dr. Yoshida) created the experiment station under the management of the Railway in 1934. The services of a Manchurian expert (Mr. Iwasaki) was acquired from the S.M.R. which has operated a long string of experiment and encouragement institutions. This expert selected the most suitable site for the purpose and with the completion of the buildings, the station was ready for real work in 1935.

Since the foundation of the station up to the outbreak of the China Incident a total of 6 Japanese instructors and experts have been dispatched but two out of this group gave their lives to their cause, the weather conditions being disagreeable. Thanks to the untiring services of the other 4 pioneers of peaceful industrial development and to the generous efforts of Chinese assistants good progress was made, but unfortunately a brutal fate had to befall upon all of them in the form of bloody Tsungchow massacre carried out by the Chinese soldiers. The loss of these men is a grievous matter for the Chinese themselves.

Since then more earnest assistance has been given by Japan and 14 Japanese experts (S.M.R. men) detailed to the station in November, 1937, have carried on the work, while buildings and lands have been readjusted and a new entomology section created. Twenty-

one Chinese who are cooperating heartily in the work have been added to the staff.

Today this station is carrying on experiments to produce high grade seeds and to improve cultivation methods, while fertilizers and irrigation matters are also receiving due attention. In addition wheat, kenaf and other grains are being studied, and the eradication as well as the prevention of insect pests are occupying much of the experimenters' time. The benefits which the general farmers of North China will shortly receive from the enthusiastic work of the station will be great indeed.

2. Peking Municipal Agricultural Experiment Station. 64 chobu of land (1 chobu is equal to 2.45 acres or 99.17 ares). Director—Mayor of Peking. 6 sections.

3. First Provincial Agricultural Experiment Station of Hopel at Tientsin. Yearly expenditure—4,000 to 6,000 yuan. 10 persons on staff.

4. Hantan Second Station—yearly expenditure—4,000 to 5,000 yuan. Personnel—8.

5. Tsohochen Third Station—Personnel—8. Yearly expenditure—4,000 to 5,000

yuan.

6. Titan Fourth Station—Annual expenditure—3,000 yuan. Personnel—6.

7. Lifan Cotton Experiment Station. Unknown.

8. Lanching Cotton Experiment Station. Unknown.

9. Chengting National Cotton Experiment Station. Unknown.

10. Tsitung National Cotton Experiment Station. Unknown.

11. Tsinan Agricultural Experiment Station. Unknown.

12. Ting-hsien Experiment Station for Public Enlightenment.

With the outbreak of hostilities, the responsible persons of these experiment stations fled into safer regions carrying with them all valuable material and documents. Then came the anti-Japanese elements who utilized these stations for military purposes and left only the wrecks as reminders of what had existed before. No information regarding these stations was available under such conditions but with the coming of the Japanese anything that can still be used are being put in order. Before long the former stations will be in working order again.

SPINNERS' CAPITAL AND EQUIPMENT

At the end of	Cos.	Paid Cap. (000s)	Reserves (000s)	Mills	Ring Spindles	Mule Spindles	Doubling Spindles	Looms
1919	54	165,758	139,074	190	3,435,932	52,330	410,690	44,401
1920	56	276,536	165,697	190	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	398,855	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
1938(")	76	604,629	302,525	296	12,776,200	—	—	114,300

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.

JAPANESE SPINNING MILLS IN CHINA AND MANCHOUKUO

End of June	No. of Companies	Mills	Spindles	Looms	End of June	No. of Companies	Mills	Spindles	Looms
1934	15	40	1,880.3	19.3	1937	15	45	2,291.4	33.3
1935	15	43	1,934.0	21.8	1938	16	54	2,110.1	25.8
1936	15	45	2,033.7	25.7					

RAW COTTON IMPORTS

(Compiled by the Finance Ministry)

(In piculs and ¥1,000)

	1936		1937		1938	
	Volume	Value	Volume	Value	Volume	Value
U. S. A.	5,928,746	372,415	4,223,964	306,388	3,248,976	166,414
British India	6,716,944	315,061	7,016,238	363,635	3,096,085	113,331
Egypt	445,463	36,415	670,390	58,759	404,720	27,530
China	463,944	22,778	400,824	23,609	1,432,414	71,790
Others	1,646,071	103,782	1,453,497	98,772	1,196,259	57,770
Total	15,211,168	850,452	13,764,913	851,163	9,378,454	436,835

CONSUMPTION OF COTTON

(Compiled by the Japan Cotton Spinners' Association)

(In kilogrammes)

	Indian	American	Chinese	Egyptian	African
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	5,173,796	24,023,621	8,429,535

(In piculs)

1935	5,088,775	6,341,538	32,992	513,186	66,647
1936	5,467,371	5,209,641	159,670	478,053	283,951
1937	6,082,000	5,239,000	250,000	920,000	—

	Annamese	Chosenese	Others	Total
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	—	—	—	—	—	—	—	13,845,000

PRODUCTION, CONSUMPTION, IMPORTS AND EXPORTS OF COTTON YARNS SINCE 1933

(In bales)

Year	Domestic Output	Imports	Exports	Exported as Cotton Tissues	Domestic Consumption
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	1,585,799
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	4,010,576	10,877	128,908	1,890,690	1,949,981
1938	2,859,022	1,868	105,265	1,766,802	988,575

PRODUCTION OF COTTON YARNS IN JAPAN PROPER

(Compiled by the Ministry of Commerce and Industry)

Year	No. of Mills (At the end of Year)	No. of Operatives	Production	
			Quantity (In metric ton)	Value (In ¥1,000)
1933	344	140,274	568,034	677,511
1934	417	170,114	635,385	795,686
1935	443	168,800	646,756	806,346
1936	473	183,504	673,124	830,909
1937	599	183,354	721,904	1,044,077

Source: The "Factory Statistics."

PRODUCTION OF COTTON TISSUES IN JAPAN PROPER

(Compiled by the Ministry of Commerce and Industry)

Year	No. of Mills	No. of Looms (At the end of Year)	No. of Operatives	Value of
				Production (Unit: ¥1,000)
1933	53,642	362,866	216,325	704,893
1934	51,139	376,704	224,645	816,361
1935	48,389	385,980	229,707	822,417
1936	46,915	392,941	239,881	883,341
1937	41,513	407,520	234,034	1,112,685

Note: Figures include production by small factories which employ less than 5 persons, and differ from those given in the "Factory Statistics."

SUPPLY AND DEMAND OF COTTON TISSUES
IN JAPAN PROPER

	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	856,964
1930	2,615,411	1,388,423	1,226,988	1,571,825	1,043,588
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	1,060,408
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	2,577,237	1,606,079
1935	4,112,111	1,843,471	2,268,640	2,725,109	1,400,759
1936	3,973,479	1,799,033	1,780,972	2,709,885	1,269,692
1937	4,212,825	1,890,554	2,322,262	2,644,029	1,577,175
1938	3,101,028	1,461,649	1,639,379	2,180,810	920,218

EXPORTS OF COTTON TISSUES

(In 1,000 sq. yards)

	1933	1934	1935	1936	1937	1938
Manchoukuo	8,971	91,911	170,430	161,283	223,775	135,157
China	113,248	59,443	56,046	37,329	45,098	110,644
Kwantung L. T.	83,529	68,087	127,097	117,807	117,607	58,329
Hong-Kong	28,692	36,292	49,384	84,656	40,138	23,091
British India	451,791	451,640	561,510	479,676	331,190	469,880
Straits Settlements	95,769	90,989	47,359	48,208	51,784	26,294
Dutch East Indies	422,755	440,870	372,242	351,718	434,392	206,436
Philippines	34,918	75,709	87,481	44,314	54,174	32,677
Siam	39,826	60,555	70,012	72,186	71,815	79,946
Turkey	11,157	7,835	19,480	26,521	14,451	12,716
Canea, Uganda and Tan- ganyika	—	—	—	100,386	103,098	85,071

	1933	1934	1935	1936	1937	1938
Anglo-Egyptian Sudan	—	—	—	62,572	76,660	78,711
Syria	—	—	—	45,798	48,860	55,696
Iraq	—	—	—	55,438	47,623	53,613
Aden	—	—	—	59,474	55,450	41,243
Iran	—	—	—	8,231	9,005	16,817
Arabia	—	—	—	12,753	17,324	24,244
Ceylon	—	—	—	9,152	11,265	19,122
Germany	—	—	—	26,846	20,269	20,003
Mozambique	—	—	—	9,809	14,459	11,054
Sweden	—	—	—	9,537	14,720	14,608
Venezuela	—	—	—	26,664	21,177	11,978
Great Britain	—	—	—	19,059	24,155	16,587
U. S. A.	7,485	17,370	48,336	73,444	123,775	16,115
Chile	6,534	31,737	26,838	32,645	36,402	21,036
Argentina	34,942	66,365	103,377	82,169	131,008	66,544
Uruguay	2,611	9,559	4,664	10,938	20,946	10,152
Egypt	210,349	233,686	163,737	101,219	49,685	21,417
Union of South Africa	26,101	16,173	25,239	29,713	32,809	26,169
Australia	54,999	74,547	86,634	20,059	52,528	64,394
New Zealand	2,622	2,835	5,446	12,287	11,208	9,590
Others and Total	2,090,230	2,577,237	2,725,109	2,709,884	2,644,028	2,180,810
Value (¥1,000)	383,215	492,351	496,097	483,592	573,065	404,240

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 industry 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 Fukui, followed by Kyoto, Ishikawa, Niigata and Tokyo in the order named. Among silk weaves of Japanese manufacture habutaé, taffeta, popline, chiffon, pongee, fuji silk, crêpe, 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, mel-sen, nishijin, etc.

The Industry in 1937 Continued prosperity featured the silk weaving industry in Japan in 1937, but exports decreased to ¥49,352,000 from ¥72,286,000 of 1936, largely owing to the state control of trade and the barriers set up by various foreign markets.

The number of mills was 65,552, a decrease of 7,047 as compared with the previous year, but that of looms increased by 9,895, indicating the increase of larger mills. The number of operatives also decreased by 16,067.

Production of Silk Weaves Owing to the increase in consumption at home production showed gains. Total production in 1937 was valued at ¥721,447,826, a gain of ¥58,314,297 or 8.7 per cent over the previous year. Of the total, crêpes amounted to ¥109,141,110 and showed an increase of ¥17,166,588 over 1936; habutaé totalled ¥29,310,154, a decrease of ¥2,678,964; and fuji silk ¥22,764,177 with a slight gain. Production of silk textiles since 1930 follows:

PRODUCTION OF SILK TEXTILES

(Compiled by the Ministry of Commerce and Industry)

Year	Broad Weaves							
	1930	1931	1932	1933	1934	1935	1936	1937
No. of Mills	79,864	77,723	72,448	71,273	72,907	72,311	72,599	65,552
No. of Looms	226,185	232,443	245,689	260,377	301,721	334,845	369,319	379,214

THE TEXTILE INDUSTRY

Year	1930	1931	1932	1933	1934	1935	1936	1937
No. of Operatives	206,542	213,285	224,561	236,997	267,345	290,912	310,359	294,292
Crêpes and Kabe-ori								
Qt'y in 1,000 metres	32,233	34,646	45,812	85,385	124,950	179,348	231,376	204,123
Value in ¥1,000	33,606	27,964	33,546	66,105	73,721	82,973	91,974	109,141
Habutaé								
Qt'y in 1,000 metres	45,545	31,213	36,060	48,735	109,110	81,858	127,171	102,547
Value in ¥1,000	21,434	11,907	13,273	19,281	27,174	21,838	31,998	29,31
Pongee								
Qt'y in 1,000 metres	20,665	33,071	32,550	35,636	37,109	22,807	15,258	19,002
Value in ¥1,000	7,091	9,655	11,164	12,699	10,790	6,838	4,634	6,532
Fuji silk								
Qt'y in 1,000 metres	51,320	51,551	56,619	65,945	59,439	50,866	41,517	43,464
Value in ¥1,000	26,862	24,851	28,896	33,216	31,155	27,804	22,718	22,764
Satin								
Qt'y in 1,000 metres	21,581	25,490	45,799	45,527	74,577	91,087	89,556	86,617
Value in ¥1,000	16,653	14,268	20,048	21,904	26,546	26,790	27,361	27,473
Others & total								
Value in ¥1,000	150,657	137,251	175,640	235,902	273,097	283,420	311,842	366,580

Narrow Weaves

Year	1930	1931	1932	1933	1934	1935	1936	1937
Omeshi								
Qt'y in 1,000 tan	1,208	1,783	2,102	1,493	1,783	2,095	2,529	3,744
Value in ¥1,000	17,954	22,577	21,195	15,809	17,398	19,975	17,945	19,640
Crêpes and Kabé								
Qt'y in 1,000 tan	7,248	10,659	9,611	10,979	15,199	17,865	19,321	16,466
Value in ¥1,000	59,511	67,670	60,982	69,207	93,761	101,236	100,246	84,600
Habutaé, etc.								
Qt'y in 1,000 tan	3,986	3,701	3,495	2,911	3,748	4,688	3,170	3,654
Value in ¥1,000	24,158	20,475	20,241	17,553	19,389	23,365	16,955	16,871
Ro and Sha								
Qt'y in 1,000 tan	1,368	1,347	2,139	1,894	2,717	2,567	3,175	3,372
Value in ¥1,000	11,111	8,352	12,231	11,319	12,868	12,367	13,279	13,180
Meisen, etc.								
Qt'y in 1,000 tan	14,432	13,526	12,601	12,117	12,735	11,205	10,639	11,889
Value in ¥1,000	68,500	57,017	48,132	46,096	49,641	44,907	42,525	48,278
Others & total								
Value in ¥1,000	209,774	207,898	198,869	197,349	234,353	242,750	236,996	228,279
Special Weaves								
Value in ¥1,000	31,175	31,599	33,351	30,931	47,091	53,053	53,101	49,402
Total of Silk Textiles								
Value in ¥1,000	391,606	376,749	407,860	464,183	554,542	579,223	601,940	644,262
Silk-Cotton Mixtures								
Value in ¥1,000	33,532	30,107	31,159	36,912	46,328	53,709	61,192	77,185
Grand total								
Value in ¥1,000	425,138	406,857	439,019	501,095	600,870	632,933	663,133	721,447

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	1935	1936	1937	1938
Habutaé				
{ quantity in 1,000 sq.-yds.	20,840	26,664	39,318	39,597
{ value in ¥1,000	9,844	10,840	17,393	15,492
Satin				
{ quantity in 1,000 sq.-yds.	6,279	5,790	2,969	2,705
{ value in ¥1,000	4,043	3,261	1,953	1,996
Fuji silk				
{ quantity in 1,000 sq.-yds.	22,973	23,426	23,101	9,834
{ value in ¥1,000	13,670	13,573	14,902	6,841

RAYON AND STAPLE FIBRE

Kind	1935	1936	1937	1938
Crêpes				
{ quantity in 1,000 sq.-yds.	50,476	42,173	40,692	26,440
{ value in ¥1,000	38,827	31,274	30,831	19,477
Pongee				
{ quantity in 1,000 sq.-yds.	17,093	9,191	10,301	6,121
{ value in ¥1,000	5,085	2,976	3,679	2,088
Others and Total				
Value in ¥1,000	77,444	68,027	72,286	49,552

Rayon and Staple Fibre

Rayon and Staple Fibre Industry

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 59 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 importa-

tion 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.

Rayon Yarn

On account of economic and trade control the production and exports of rayon yarn in 1938 dwindled to a considerable extent as it is shown in the following table:

SUPPLY AND DEMAND OF RAYON YARN

(In cases. One case=100 pounds)

Year	Production	Imports	Exports	Exported as textiles	Domestic Consumption
1934	1,584,951	664	222,241	571,541	791,833
1935	2,230,215	433	304,279	701,273	1,225,096
1936	2,765,051	238	443,371	873,017	1,448,901
1937	3,247,496	638	564,158	801,409	1,882,567
1938	1,991,661	99	219,847	560,201	1,211,724

Note: Figures are based on the report of the Japan Rayon Manufacturers' Association

EXPORTS OF RAYON YARN

(In case of 100 lbs.)

	1934	1935	1936	1937	1938
China and Hong-Kong	24,766.0	38,230	36,011	61,763	86,641
Manchoukuo and Kwantung	81,858.0	71,878	131,597	16,733	27,734
India	84,303.5	101,331	141,124	306,702	60,468
Dutch East Indies	3,000.0	6,989	12,638	33,676	6,442
South Sea Region	6,940.3	12,315	18,060	29,307	3,507
Europe	1,212.6	8,922	18,949	7,370	2,388
North America	9.5	3,418	6,798	3,215	322
Central America	15,329.8	23,769	38,168	72,041	17,596
South America	500.3	10,768	4,706	11,336	905
Egypt and Africa	3,198.0	11,111	18,852	15,340	6,257
Australia and New Zealand	449.9	15,548	16,468	6,675	7,587
Others	183.8	—	—	—	—
Total	221,771	304,279	443,371	564,158	219,847
Total Value (in ¥1,000)	22,397	22,852	39,170	44,792	17,845

Note: Figures of the Japan Rayon Manufacturers' Association

Rayon Tissues The production of rayon tissues in 1938 was valued at ¥376,102,000, showing a decrease of ¥96,838,000 or 20.4 per cent from the previous year.

PRODUCTION OF RAYON TISSUES

(Compiled by the Ministry of Commerce and Industry)

(In ¥1,000)

	Pure and Mixed with Silk			Cotton	Mixed with		Total including others
	Broad Weave	Narrow Weave	Special Weave		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	384,001
1937	269,865	74,149	41,425	50,057	902	40,032	472,940
1938	219,925	58,666	31,766	31,032		34,713	376,102

EXPORTS OF RAYON FABRICS

(In 1,000 square yards)

	1934	1935	1936	1937	1938
China and Hong-Kong	2,323.9	13,037.9	28,677	32,389	29,565
Manchoukuo and Kwantung	16,344.1	28,343.3	58,814	46,520	96,954
India	76,283.4	74,670.8	92,081	94,854	32,448
Dutch East Indies	46,726.1	49,987.3	51,556	46,780	26,688
Other Asiatic Countries	36,361.4	63,242.6	87,809	84,091	40,096
Europe	5,301.4	11,892.8	21,401	19,600	10,241
North America	852.1	1,455.4	5,289	8,000	4,112
Central America	20,743.8	15,565.7	23,328	21,908	14,389
South America	13,382.5	20,838.4	28,626	18,402	7,611
Egypt and Africa	68,156.7	69,878.3	56,667	55,718	24,710
Australia and New Zealand	46,402.1	75,228.7	73,694	56,837	49,645
Total including others	345,655	424,000.0	527,942	485,098	337,122
Total Value (in ¥1,000)	113,484	128,260	149,170	154,860	115,762

Note: Figures of the Japan Rayon Manufacturers' Association

Staple Fibre

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. The figures for 1938 rose to 376,208,000 lbs.

PRODUCTION OF STAPLE FIBRE

(Compiled by the Japan Staple Fibre Manufacturers' Association)

Year	Production in 1,000 lbs.
1933	965
1934	4,720
1935	13,625
1936	45,850
1937	174,494
1938	376,208

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

According to the report of the Japan Staple Fibre Manufacturers' Association the total exports of staple fibre and its products in 1938 amounted to ¥44,861,500, the figure representing twice as much as 1937.

EXPORTS OF STAPLE FIBRE AND ITS PRODUCTS IN 1937 AND 1938

Kind	1937	1938
Fibre in 1,000 lbs.	14,770	291
Value in ¥1,000	7,967.4	7,408.3
Yarn in 1,000 lbs.	8,177	10,598
Value in ¥1,000	7,408.3	10,673.2
Textiles in 1,000 sq. yards	16,754.6	60,452.5
Value in ¥1,000	6,871.9	26,780.0
Total value	22,247.6	44,861.5

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. Total supply of pulp for making paper, rayon, staple fibre and cellophane reached 1,498,463 metric tons in 1937, including production in Japan and Manchoukuo and imports from other foreign countries. Of the total, 347,892 tons were for rayon, staple fibre and cellophane. The amount consumed for making these rayon and staple fibre was 279,155 tons, or 18 per cent of the total supply. 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.

SUPPLY AND DEMAND OF WOOD 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

	Supply			Demand			
	Production	Imports	Total	Rayon	Staple Fibre	Cellophane	Total
1935	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	57,294	290,598	347,892	181,222	97,933	7,070	287,125

IMPORTS OF PULP FOR FIBRE BY ORIGIN
(Compiled by the Ministry of Commerce and Industry)

From	Quantity (Unit: picul)			Value (Unit: ¥1,000)		
	1936	1937	1938	1936	1937	1938
U. S. A.	2,603,407	3,185,610	872,310	31,758	49,181	15,111
Sweden	952,184	2,060,596	420,803	9,735	26,993	6,276
Norway	944,566	1,025,406	307,269	14,621	17,071	5,400
Canada	469,888	879,390	284,278	4,150	12,619	5,046
Finland	524,417	639,770	211,921	6,401	9,497	3,339
Czechoslovakia	29,328	71,816	8,538	391	1,157	132
Total including others	5,528,532	7,901,727	2,386,181	67,107	116,720	41,059

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 1938

The production of woollen yarns and textiles during the year was consider-

ably curtailed on account of the large stock left over from the previous year and the Governmental limitation on imports of wool.

SUPPLY AND DEMAND OF WOOLLEN YARN

(In 1,000 pounds)

	Production by Associat-ed Co's.	Im-ports	Total	Ex-ports	Bal-ance
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

	Production by Associat-ed Co's.	Im-ports	Total	Ex-ports	Bal-ance
1935	112,775	1,088	113,863	5,319	108,544
1936	123,263	934	124,197	7,141	117,056
1937	125,072	576	125,648	7,402	118,246
1938	88,784	84	88,868	7,847	81,021

Note: The balance represents domestic consumption.

EXPORTS

(Value in 1,000 yen)

	1933	1934	1935	1936	1937	1938
Woollen yarn						
Quantity (1,000 pounds)	3,169	5,920	5,319	7,140	7,402	7,847
Value	5,293	12,185	9,688	15,312	20,208	19,360
Woollen textiles						
Value	12,770	30,420	32,401	45,956	50,082	46,845
Total value	18,063	42,605	42,089	61,266	70,290	66,205

IMPORTS

	1933	1934	1935	1936	1937	1938
Woollen yarn						
Quantity (1,000 pounds)	1,638	913	1,085	905	576	88
Value	3,021	1,708	1,931	1,873	1,605	328
Woollen textiles						
Value	7,338	5,316	6,753	9,675	9,292	2,724
Total value	10,357	7,024	8,684	11,548	10,897	3,052
Balance between Exports & Imports						
Value	7,706	35,581	33,405	49,720	59,393	63,153

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	221,382	204,342
1931	191,374	86,518	1937	261,182	299,500
1932	206,858	88,321	1938	117,895	96,312
1933	242,620	165,818			
1934	184,379	187,667			
1935	247,275	193,092			

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

IMPORTS OF SHEEP'S WOOL BY ORIGIN

(Compiled by the Ministry of Commerce and Industry)

From	Quantity (Unit: picul)			Value (Unit: ¥1,000)		
	1936	1937	1938	1936	1937	1938
Australia	1,169,468	737,195	591,136	147,493	118,196	64,882
New Zealand	179,455	296,050	85,671	18,316	42,822	8,372
Argentina	56,773	126,548	55,265	6,562	17,713	5,946
Union of South Africa	140,780	559,015	39,666	17,389	82,763	4,266
China	5,095	2,984	44,000	611	382	3,327
Manchoukuo	4,578	2,969	21,458	269	527	2,478
Chile	16,612	20,390	6,976	1,744	2,353	780
Great Britain	8,496	6,252	3,716	1,190	1,073	677
Total including others	1,640,636	1,953,835	881,889	200,898	298,404	94,429

WOOLLEN YARN AND TEXTILE MANUFACTURING FACILITIES

(At the end of the year)

	1932	1933	1934	1935	1936	1937
Number of woollen textile factories	1,138	1,178	1,226	1,421	1,528	1,648
Number of weaving machines	26,554	26,923	27,162	29,421	31,220	30,317
Number of operatives	41,606	41,311	44,347	47,142	50,046	49,890
Number of worsted spindles ¹	561,564	667,390	763,878	873,066	991,140	1,127,802
Number of weaving machines ¹	10,043	9,871	10,257	10,248	10,261	7,868
Number of woollen spindles ¹	87,893	88,403	91,272	97,917	119,048	121,114

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

PRODUCTION OF WOOLLEN TEXTILES

(Compiled by the Ministry of Commerce and Industry)

Year	Muslin		Flannel		Serge for Japanese clothes	
	Quantity in metres	Value in yen	Quantity in metres	Value in yen	Quantity in metres	Value in yen
1930	140,413,675	54,518,694	2,874,911	3,542,837	28,724,040	29,095,228
1931	147,817,541	49,476,288	3,460,173	3,393,080	35,937,088	30,831,866
1932	164,580,936	51,379,813	4,132,697	4,224,307	32,481,305	29,727,708
1933	132,953,959	48,276,271	3,744,062	3,782,949	31,244,644	29,161,570
1934	121,576,277	50,840,485	2,390,756	3,062,003	28,989,058	29,627,172
1935	134,241,500	54,807,185	2,648,911	3,454,219	36,169,643	36,989,712
1936	99,935,993	47,077,830	2,511,902	2,985,476	22,922,705	23,297,322
1937	59,877,557	29,779,752	2,655,534	3,903,127	26,946,554	28,163,978

Year	Serge for Foreign clothes		Woollen cloth		Blankets (including travelling rugs)	
	Quantity in metres	Value in yen	Quantity in metres	Value in yen	Quantity in pieces	Value in yen
1930	18,261,301	39,933,727	7,384,187	19,360,204	584,880	3,698,673
1931	19,670,151	33,959,069	8,209,882	18,497,529	1,171,422	4,272,580
1932	23,977,240	43,847,243	10,393,521	21,930,632	1,025,485	3,644,158
1933	30,382,977	63,850,283	11,985,167	29,927,479	1,446,639	5,898,423
1934	53,811,981	114,432,693	14,813,572	36,710,705	1,982,235	6,579,557
1935	50,142,258	127,489,700	16,182,943	41,100,367	2,038,922	7,750,958
1936	63,840,711	180,491,190	15,306,305	43,541,494	2,803,726	10,912,980
1937	66,027,071	169,152,963	18,434,104	58,774,401	2,950,069	12,892,153

Year	Carpets		Rugs		Plush and Velvet		Others		Total Value in yen
	Value in yen	Value in yen	Value in yen	Value in yen	Value in yen	Value in yen	Value in yen		
1930	713,856	140,077	523,970	13,056,764	164,584,030	12,806,187	153,824,442		
1931	106,779	124,701	356,363	11,755,140	167,010,054	19,142,291	201,137,749		
1932	17,280	120,391	363,382	19,142,291	264,131,170	21,528,276	296,226,848		
1933	236,021	171,718	690,744	23,002,975	339,857,083	2,002,975	328,009,685		
1934	52,000	240,975	1,049,304	29,521,825	21,418,317	1,050,537			
1935	344,363	236,832	1,050,537	21,418,317		1,416,589			
1936	381,474	230,903	2,741,100			2,741,100			
1937	952,367	231,527							

Note: This table is revised according to the report of the Ministry of Commerce and Industry, the figures of which differ from those in the "Factory Statistics", because the former includes production by small factories where less than 5 persons are employed.

EXPORTS OF WOOLLEN TEXTILES BY KIND

	1936			1937			1938		
	Quantity in 1,000 sq. yards	Value in ¥1,000	Quantity in 1,000 sq. yards	Value in ¥1,000	Quantity in 1,000 sq. yards	Value in ¥1,000	Quantity in 1,000 sq. yards	Value in ¥1,000	
Muslin	2,096	1,066	1,573	1,024	1,122	749	27,327	28,212	20,812
Cloth and Serge	1,066	1,024	749	37,004	35,058	28,071	34,358	41,229	35,367
Total including others				45,956	50,082	46,845			

Hemp Tissues

The conditions of the hemp tissues manufacturing industry since 1930 are given below. Main articles are cloth,

canvas and mosquito nets. The value of canvas amounted to ¥4,800,000, and that of mosquito nets to ¥2,636,000 for 1937.

PRODUCTION OF HEMP TISSUES

(Compiled by the Ministry of Commerce and Industry)

Year	No. of Mills	No. of Looms	No. of Operatives	Broad Weave	Narrow Weave	Others	Total
1930	14,222	20,708	21,261	6,131	5,500	2,991	14,623
1931	14,375	20,414	20,519	6,118	5,363	1,954	13,436
1932	13,821	19,192	19,593	8,002	6,279	1,299	15,580
1933	12,775	18,139	18,679	7,550	5,728	2,197	15,477
1934	12,062	18,413	18,675	9,530	7,116	1,868	18,515
1935	10,926	17,854	19,313	10,686	7,052	2,481	20,220
1936	10,880	17,315	18,371	12,533	5,115	2,203	19,851
1937	9,352	17,055	19,091	18,567	5,116	3,295	26,978

Hosiery

In 1937, hosiery produced underwears, stockings, gloves, etc. to the amount of ¥115,500,996. The production

of underwears reached 7,895,437 dozens valued at ¥47,183,873; stockings 16,187,649 dozens valued at ¥30,863,188; gloves 8,015,723 dozens valued at ¥14,673,884.

VALUE OF PRODUCTION BY HOSIERIES

(Compiled by the Ministry of Commerce and Industry)

Year	No. of Mills	No. of Operatives	Value of Products (In ¥1,000)
1933	5,243	38,241	73,476
1934	5,653	41,658	85,632
1935	6,198	45,605	84,931
1936	6,250	46,947	91,551
1937	6,776	51,332	115,501

Dyeing and Bleaching

In 1937, bleaching houses earned ¥24,545,944. In the same year dyeing houses

earned ¥168,934,148, consisting of ¥76,928,913 for dyeing cloth, ¥81,862,659 for printing and ¥10,142,576 for dyeing miscellaneous articles.

EARNINGS OF DYEING AND BLEACHING HOUSES

(Compiled by the Ministry of Commerce and Industry)

Year	No. of Bleaching Houses	No. of Operatives	Earnings (In ¥1,000)	No. of Dyeing Houses	No. of Operatives	Earnings (In ¥1,000)
1933	521	6,350	19,336	11,659	57,674	105,193
1934	578	8,031	17,099	11,613	61,776	120,795
1935	632	8,114	19,822	11,570	65,986	134,107
1936	619	9,432	22,795	11,784	74,580	168,676
1937	571	9,496	24,545	11,778	75,757	168,934

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 1938

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 and 1938 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 six machinery manufacturing companies, the Mitsubishi Heavy Industry, the Hitachi 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 ¥585,516,000 during 1938 against ¥339,002,000 for the preceding year. Their total annual production during the past six 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
1938	585,616,000

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 777 in 1938. The following table shows the production by each of the big six:

	1937 Total	1938		Total
		First Half (unit: ¥1,000)	Second Half	
Ishikawajima	23,988	15,352	16,845	32,197
Daido Seiko	9,254	8,580	12,864	21,444
Hitachi Seisakusho	104,412	116,446	137,521	253,967
Shibaura Seisakusho	41,383	22,684	28,106	50,790
Niigata Iron Works	25,380	9,488	10,807	20,295
Mitsubishi Heavy Industry	134,585	86,963	119,860	206,823
Total	339,002	259,513	326,003	585,516

Fixed assets of the six companies increased with production and reached ¥248,459,000 at the end of the second half of 1938 fiscal year, an increase of ¥185,796,000 or nearly 300 per cent as compared with the first half of 1932 in which it amounted to ¥62,663,000. It gained by ¥83,777,000 or 49 per cent as compared with the similar period of 1937. Details follow:

	2nd Half of 1937	1st Half of 1938	2nd Half of 1938
	(unit: ¥1,000)		
Ishikawajima	6,287	8,680	11,414
Daido	8,336	11,273	15,165
Hitachi	56,381	66,381	78,926
Shibaura	18,907	22,055	24,738
Niigata	5,208	6,465	7,127
Mitsubishi	89,563	87,590	111,089
Total	164,682	202,444	248,459

The expansion of floating assets was wider ranged, and the aggregate floating assets of the six companies reached

¥722,207,000 at the end of the second half of 1938 fiscal year, or 7 times as large as the amount in the first half of 1932. It gained by ¥382,315,000 or 112 per cent over 1937, as it is shown in the following table:

	2nd Half of 1937	1st Half of 1938	2nd Half of 1938
	(unit: ¥1,000)		
Ishikawajima	17,724	22,048	23,353
Daido	13,800	20,573	26,172
Hitachi	121,272	150,832	190,369
Shibaura	55,030	70,225	81,021
Niigata	8,978	11,968	16,473
Mitsubishi	123,088	319,518	384,819
Total	339,892	595,164	722,207

Other 15 representative machine manufacturing companies also increased their assets by ¥53,608,000 or 30 per cent in fixed assets and ¥157,890,000 or 42 per cent in floating assets. Details follow:

	2nd Half of 1937		2nd Half of 1938	
	Fixed Assets	Floating Assets	Fixed Assets	Floating Assets
(unit: ¥1,000)				
Tsurumi Iron and Shipbuilding	35,803	35,113	37,141	44,375
Kawasaki Shipbuilding	49,930	121,390	50,380	114,822
Uraga Dockyard	8,527	23,401	5,297	27,624
Mitsubishi Electric Machinery	16,015	50,172	19,189	72,831
Fuji Electric Machinery	6,377	18,801	8,051	36,725
Ikegai Iron Works	3,369	9,531	5,998	19,517
Okuma Iron Works	2,120	7,685	4,717	11,054
Tokyo Automobile	6,307	15,684	23,848	44,933
Nippon Rolling Stock	5,799	12,543	7,512	21,373
Riken Heavy Industry	6,881	9,467	17,015	29,061
Toyoda-shiki Loom	4,968	17,285	5,132	16,229
Shimazu Works	4,085	7,250	6,588	11,593
Nippon Musical Instrument	2,708	6,415	3,494	9,792
Tokyo Gas-Electrical	5,895	7,113	13,932	34,096
Tokyo Electric	14,958	30,550	19,058	36,265
Total	173,742	372,400	227,350	530,290

Figures for the total production of machinery and tools are as yet unavailable, especially details of the branches of the industry which are directly re-

lated to armaments are kept in secrecy. But, it is estimated to have reached as much as ¥3,735,000,000 against ¥2,557,201,000 for the previous year.

GROWTH OF MACHINERY INDUSTRY

Year	No. of mills	No. of operatives	Value of production (unit: ¥1,000)
1929	8,314	190,154	682,162
1930	8,458	205,308	615,682
1931	8,513	—	443,340
1932	9,388	230,896	543,842
1933	10,648	249,323	888,195

PRODUCTION OF ENGINES

(Value in yen)

Year	Steam Engines		Steam Turbines		Gas Engines		Internal Combustion Engines		Oil Engines	
	No. Produced	Value	No. Produced	Value	No. Produced	Value	No. Produced	Value	No. Produced	Value
1929	931	2,615,111	15	754,858	128	104,545	965	9,660,598	23,828	9,900,571
1930	74	298,341	42	2,220,460	575	340,416	1,337	11,852,363	104,854	9,671,130
1931	97	80,769	17	1,458,889	10	8,800	778	5,008,217	15,295	5,228,870
1932	77	150,006	86	1,022,760	103	76,472	2,371	20,587,362	16,558	4,420,307
1933	162	580,519	51	7,269,146	142	116,780	5,546	32,360,597	17,229	4,049,818
1934	105	617,215	102	6,893,407	54	15,948	4,866	19,784,471	53,889	6,856,672
1935	144	1,308,033	187	10,551,116	14	43,260	8,439	21,092,789	35,603	8,832,063
1936	129	2,405,409	106	8,352,713	4	7,850	8,354	30,948,045	37,291	8,485,516
1937	130	486,027	229	13,552,628	168	235,110	7,456	54,149,245	40,263	9,417,941

Year	Internal Combustion Engines		Water Wheels		Total	Production of Fittings Value	Grand Total Value
	No. Produced	Value	No. Produced	Value			
1929	1,579	7,557,746	27	2,031,407	23	221,580	2,253,087
1930	2,274	6,759,923	29	1,890,568	17	35,811	1,926,376
1931	2,002	8,248,660	18	765,540	7	81,521	847,063
1932	1,783	5,790,541	30	575,847	1	1,492	577,339
1933	3,961	11,618,068	46	183,076	57	318,189	501,265
1934	4,151	15,267,978	41	1,319,476	21	133,348	1,452,824
1935	4,310	17,680,899	47	1,541,528	5	298,999	1,840,527
1936	12,510	20,987,381	60	4,419,243	26	425,778	4,845,021
1937	12,762	27,602,967	91	6,223,151	10	325,668	6,548,819

PRODUCTION OF BOILERS

(Value in yen)

Year	Water-Tube Style		Cast Iron		Others		Fittings and Accessories value	Total for Producing Gas value
	No. Produced	Value	No. Produced	Value	No. Produced	Value		
1929	179	2,375,285	295	42,032	1,529	1,968,055	1,264,520	5,649,982
1930	143	2,573,598	374	249,798	844	1,097,745	1,283,860	5,169,731
1931	86	2,388,832	89	50,330	1,180	1,197,505	2,724,523	6,369,190
1932	86	1,185,444	264	178,000	1,257	2,384,306	701,659	4,449,409

Year	No. of mills	No. of operatives	Value of production (unit: ¥1,000)
1934	12,103	314,669	1,159,167
1935	13,659	367,263	1,462,539
1936	15,052	456,963	1,716,352
1937	18,609	601,684	2,557,201

Note: The number of mills is revised. In addition to the above there were 396 governmental factories with 18,787 operatives and 75 public factories with 5,277 operatives in 1937. Figures for the total value of production in 1937 do not include the value of automobiles and motor cycles.

Year	Water-Tube Style		Cast Iron		Others		Fittings and Accessories Value	Total Value	Machinery for Producing Gas Value
	No. Produced	Value	No. Produced	Value	No. Produced	Value			
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	19,863,758	382	437,146	1,743	3,942,038	10,226,313	34,469,255	1,594,975
1936	309	16,084,129	426	587,000	1,794	6,939,190	8,122,970	31,733,289	1,805,807
1937	826	19,243,758	5	458,630	2,376	8,279,781	11,730,879	39,713,048	3,479,325

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
1929	170,258	8,608,986	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	398,632	6,837,801	686	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	3,664	6,278,294	11,231	3,634,164
1937	358,232	27,896,976	1,669	3,574,041	9,900	11,692,697	15,112	6,887,000

PRODUCTION OF OPTICAL INSTRUMENTS

Value in yen

Year	Lenses, Including Prisms	Microscopes	Telescopes	Field-glasses	Glasses
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
1937	1,675,576	428,472	89,136	3,859,539	71,099

PRODUCTION OF MEASURING AND WEIGHING INSTRUMENTS

Value in yen

Year	Rules	Measures	Scales	Gas Meters	Water Meters	Accessories and Fittings	Total
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	8,915,886
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	8,810,128
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
1937	1,365,288	900,049	5,456,722	4,865,278	1,941,244	1,161,861	15,690,442

MACHINERY AND ENGINEERING

PRODUCTION OF VARIOUS METERS

(Value in yen)

Year	Thermometers		Clinical Thermometers		Electricity Meters		Others Value	Total Value
	No. Produced	Value	No. Produced	Value	No. Produced	Value		
1929	732,099	425,584	912,172	795,288	184,181	2,128,677	2,890,857	6,240,404
1930	745,307	381,415	1,046,500	841,766	209,287	2,772,177	2,984,421	6,979,779
1931	676,743	310,924	1,237,192	777,377	213,011	2,657,049	3,066,257	6,811,607
1932	511,786	273,356	1,388,889	883,335	395,298	3,997,290	2,622,110	7,776,091
1933	750,742	431,194	1,518,544	839,151	439,268	7,312,489	4,696,288	13,279,122
1934	987,023	393,973	1,884,875	1,095,826	539,273	7,247,533	7,838,757	16,576,086
1935	1,024,870	388,441	1,886,433	1,088,657	517,888	8,901,676	12,851,744	23,230,418
1936	1,064,192	341,085	2,069,867	1,137,237	719,498	8,175,176	19,637,206	29,290,707
1937	1,326,141	270,932	2,338,080	1,449,331	928,835	12,582,718	24,113,695	38,416,676

PRODUCTION OF CLOCKS AND WATCHES

(Value in yen)

Year	Electric Clocks		Stand Clocks		Total Value
	No. Produced	Value	No. Produced	Value	
1929	6,870	303,946	1,232,269	2,664,390	506,504
1930	11,699	579,919	1,155,988	2,055,593	474,565
1931	11,250	366,148	993,287	1,350,822	362,011
1932	6,151	216,019	857,594	1,552,117	436,513
1933	7,654	240,388	1,270,467	2,047,417	514,626
1934	51,373	574,365	1,728,567	2,637,488	876,747
1935	78,675	892,791	1,930,234	3,076,711	543,069
1936	92,352	978,035	2,155,829	3,378,601	1,057,501
1937	411,493	2,720,009	2,244,210	4,176,048	892,221

Year	Clocks		Watches		Fittings Value	Total Value
	No. Produced	Value	No. Produced	Value		
1929	2,176,758	238,236	1,365,932	2,555,567	9,066,593	
1930	1,911,182	181,233	1,013,042	5,846,179	11,405,915	
1931	1,390,718	169,358	657,528	2,310,248	6,075,464	
1932	1,629,130	160,288	681,156	2,590,187	6,608,609	
1933	2,122,065	153,247	794,183	3,160,690	8,364,743	
1934	2,748,623	158,520	936,942	4,684,064	11,581,482	
1935	3,000,328	165,962	952,875	5,136,344	13,059,049	
1936	3,279,386	235,666	1,435,043	5,755,982	14,827,047	
1937	3,950,736	1,131,901	6,576,064	3,341,156	20,764,013	

PRODUCTION OF CRANES, ELEVATORS, etc.

(Value in yen)

Year	Cranes		Hoists, Conveyors, etc.		Elevators	
	No. produced	Value	No. produced	Value	No. produced	Value
1929	2,538	4,052,380	4,157,486	502	1,408,330	
1930	3,138	5,834,200	3,254,024	815	1,800,499	
1931	396	1,828,835	2,174,962	519	1,502,950	
1932	637	2,303,674	2,269,622	691	1,509,437	
1933	1,278	5,402,508	4,607,460	614	1,238,638	
1934	1,078	8,306,927	7,716,384	904	2,889,608	
1935	1,339	12,961,504	10,134,238	640	2,118,757	
1936	1,509	14,642,286	10,961,871	1,232	3,845,889	
1937	2,943	18,846,957	21,146,541	1,724	4,210,432	

MACHINERY PRODUCTION

PRODUCTION OF VARIOUS MACHINERY FOR INDUSTRIAL PURPOSES

Value in yen

Year	Agricultural machines	For Building and Civil Engineering Work	Instruments for Farming, etc.	For Mining	For Spinning and Textile Industries	For Ceramic and Cement Industry
1930	3,589,150	751,150	3,016,369	3,124,345	21,221,689	1,387,210
1931	2,914,996	981,111	2,459,796	2,047,128	22,756,086	709,668
1932	4,297,720	898,830	3,187,430	3,060,091	27,478,898	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	5,178,672	9,072,126	64,653,507	5,258,333
1935	8,599,530	1,639,373	5,814,586	14,326,438	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
1937	14,157,224	5,320,806	8,448,974	31,771,077	129,100,591	4,748,478

Year	Printing	For Saw-mills	For Paper Manufacturing	For Various Chemical Industries	For Food Manufacturing	Printing Type	Miscellaneous
1930	6,006,587	1,034,284	957,295	2,895,738	5,887,896	1,903,982	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	7,498,270	2,336,224	2,731,426	21,662,391	7,447,799	1,988,371	8,835,473
1935	7,333,681	3,171,813	3,890,798	23,577,954	9,421,217	2,251,215	11,331,071
1936	9,470,848	—	4,184,929	28,563,890	12,697,653	2,590,738	15,177,776
1937	12,438,256	—	5,558,253	48,236,336	14,827,568	3,640,077	40,713,451

PRODUCTION OF MISCELLANEOUS INSTRUMENTS

Value in yen

Year	Safes	Gas Utensils	Water-service Apparatus	Valves, Cocks, etc.	Fly Wheels, Gears, Axles, etc.	Fittings and other Accessories	Others
1930	1,025,262	317,309	1,478,908	2,227,996	6,585,132	20,002,974	32,278,969
1931	1,200,092	406,968	1,136,255	1,641,080	5,962,705	11,680,398	32,121,271
1932	1,264,764	723,906	2,019,744	2,369,581	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	14,622,842	46,770,100	89,859,874
1935	1,785,588	1,913,606	1,571,696	8,270,095	21,689,987	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
1937	2,741,006	1,895,527	3,004,867	20,338,559	35,858,286	151,883,655	465,386,885

PRODUCTION OF MUSICAL INSTRUMENTS, etc.

Value in yen

Year	Pianos	Organs	Violins, Mandolins, etc.	Others	Total	Gramophones	Arms
1930	1,878,800	1,016,210	119,188	1,147,472	4,161,670	2,096,439	13,141,067
1931	2,078,406	1,199,649	77,464	910,694	4,266,213	2,811,850	13,443,520
1932	1,907,456	941,951	52,184	994,363	3,868,974	3,110,657	23,185,829
1933	2,325,761	961,622	96,027	1,421,028	4,804,458	4,657,102	32,217,961
1934	2,465,038	931,591	134,802	1,943,023	5,474,454	6,355,129	42,162,028
1935	2,619,122	991,996	179,771	2,353,701	6,144,590	5,347,772	59,914,364
1936	2,788,388	929,808	249,192	2,600,399	6,567,787	5,614,129	57,179,357
1937	2,985,431	1,019,772	260,031	2,980,118	7,245,352	5,667,568	86,772,732

MACHINERY AND ENGINEERING

PRODUCTION OF VARIOUS METERS
(Value in yen)

Year	Thermometers		Clinical Thermometers		Electricity Meters		Others Value	Total Value
	No. Produced	Value	No. Produced	Value	No. Produced	Value		
1929	732,099	425,584	912,172	795,286	184,181	2,128,677	2,890,857	6,240,404
1930	745,307	381,415	1,046,500	841,766	209,287	2,772,177	2,984,421	6,979,779
1931	676,743	310,924	1,237,192	777,377	213,011	2,657,049	3,066,257	6,811,607
1932	511,786	273,356	1,388,889	883,335	395,298	3,997,290	2,622,110	7,776,091
1933	750,742	431,194	1,518,544	639,151	439,268	7,312,489	4,696,288	13,279,122
1934	987,023	393,973	1,884,875	1,095,826	539,273	7,247,533	7,838,757	16,576,086
1935	1,024,870	388,441	1,886,433	1,088,657	517,888	8,901,676	12,651,744	23,230,418
1936	1,064,192	341,085	2,069,867	1,137,237	719,498	8,175,176	19,637,206	29,290,707
1937	1,326,141	270,932	2,338,080	1,449,331	928,835	12,582,718	24,113,695	38,416,676

PRODUCTION OF CLOCKS AND WATCHES
(Value in yen)

Year	Electric No. Produced	Clocks		Stand No. Produced	Value	No. Produced	Total Value
		Value	No. Produced				
1929	6,870	303,946	1,232,269	1,155,988	2,664,390	506,504	474,565
1930	11,699	579,919	993,287	857,594	1,350,822	362,011	436,513
1931	11,250	366,148	1,270,467	1,728,567	1,552,117	514,626	876,747
1932	6,151	216,019	1,728,567	1,930,234	2,047,417	543,069	1,057,501
1933	7,654	240,388	1,728,567	1,930,234	2,637,488	892,221	892,221
1934	51,373	574,365	1,930,234	2,155,829	3,076,711	4,176,048	4,176,048
1935	78,675	892,791	2,155,829	2,244,210	3,378,601	892,221	892,221
1936	92,352	978,035	2,244,210	2,244,210	4,176,048	892,221	892,221
1937	411,493	2,720,009	2,244,210	2,244,210	4,176,048	892,221	892,221

Year	Clocks Value	Watches		Fittings Value	Total Value
		No. Produced	Value		
1929	2,176,758	238,236	1,365,932	2,555,567	9,066,593
1930	1,911,182	181,233	1,013,042	5,846,179	11,405,915
1931	1,390,718	169,358	657,528	2,310,248	6,075,464
1932	1,629,130	160,288	681,156	2,590,187	6,668,669
1933	2,122,065	153,247	794,183	3,160,690	8,364,743
1934	2,748,623	158,520	936,942	4,684,064	11,581,492
1935	3,000,328	165,962	952,875	5,136,344	13,059,049
1936	3,279,386	235,666	1,435,043	5,755,982	14,827,047
1937	3,950,736	1,131,901	6,576,064	3,341,156	20,764,013

PRODUCTION OF CRANES, ELEVATORS, etc.
(Value in yen)

Year	Cranes No. produced	Hoists, Conveyors, etc.		Elevators No. produced	Value
		Value	Value		
1929	2,538	4,052,380	4,157,486	502	1,408,330
1930	3,138	5,834,200	3,254,024	815	1,800,409
1931	396	1,828,835	2,174,962	519	1,502,950
1932	637	2,303,674	2,269,622	691	1,509,437
1933	1,278	5,402,508	4,607,460	614	1,238,638
1934	1,078	8,306,927	7,716,384	904	2,889,608
1935	1,339	12,961,504	10,134,238	640	2,118,757
1936	1,509	14,642,286	10,961,871	1,232	3,845,689
1937	2,943	18,846,957	21,146,541	1,724	4,210,432

MACHINERY PRODUCTION

PRODUCTION OF VARIOUS MACHINERY FOR INDUSTRIAL PURPOSES
(Value in yen)

Year	Agricultural machines	For Building and Civil Engineering Work	Instruments for Farming, etc.	For Mining	For Spinning and Textile Industries	For Ceramic and Cement Industry
1930	3,589,150	751,150	3,016,369	3,124,345	21,221,689	1,387,210
1931	2,914,996	981,111	2,459,796	2,047,128	22,756,086	709,668
1932	4,297,720	898,830	3,187,430	3,060,091	27,478,898	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	5,178,672	9,672,126	64,653,507	5,258,333
1935	8,599,530	1,639,373	5,814,586	14,326,438	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
1937	14,157,224	5,320,806	8,448,974	31,771,077	129,100,591	4,748,478

Year	Printing	For Saw-mills	For Paper Manufacturing	For Various Chemical Industries	For Food Manufacturing	Printing Type	Miscellaneous
1930	6,006,587	1,034,264	957,295	2,895,738	5,887,896	1,903,982	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	6,615,601	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	7,498,270	2,336,224	2,731,426	21,662,391	7,447,799	1,988,371	8,835,473
1935	7,333,681	3,171,813	3,890,798	23,577,954	9,421,217	2,251,215	11,331,071
1936	9,470,848	—	4,184,929	28,563,890	12,697,653	2,590,738	15,177,776
1937	12,438,256	—	5,558,253	48,236,336	14,827,568	3,640,077	40,713,451

PRODUCTION OF MISCELLANEOUS INSTRUMENTS

Year	Safes	Gas Utensils	Water-service Apparatus	Valves, Cocks, etc.	Fly Wheels, Gears, Axles, etc.	Fittings and other Accessories	Others
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	1,264,764	723,906	2,019,744	2,369,581	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	1,699,536	7,155,687	14,822,842	46,770,100	89,859,874
1935	1,785,588	1,913,606	1,571,696	8,270,095	21,689,987	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
1937	2,741,006	1,895,527	3,004,867	20,338,559	35,858,286	151,883,655	465,386,885

PRODUCTION OF MUSICAL INSTRUMENTS, etc.

Year	Pianos	Organs	Violins, Mandolins, etc.		Total Gramophones	Arms	
			Others	Value			
1929	2,254,873	1,048,930	166,123	1,554,083	5,024,018	1,939,877	18,646,292
1930	1,878,800	1,016,210	119,188	1,147,472	4,161,670	2,096,439	13,141,067
1931	2,078,406	1,199,649	77,464	910,694	4,266,213	2,811,850	13,443,520
1932	1,907,456	941,951	52,184	994,383	3,868,974	3,110,657	23,185,829
1933	2,325,761	961,622	96,027	1,421,028	4,804,458	4,657,102	32,217,961
1934	2,465,038	931,591	134,802	1,943,023	5,474,454	6,355,129	42,162,028
1935	2,619,122	991,996	179,771	2,353,701	6,144,590	5,347,772	59,914,364
1936	2,788,388	929,808	249,192	2,600,399	6,567,787	5,614,129	57,179,357
1937	2,985,431	1,019,772	260,031	2,980,118	7,245,352	5,667,568	86,772,732

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

Year	Value in yen					
	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.
1929	736,400	7,175,891	2,295,556	904,369	1,529,458	769,608
1930	496,019	918,322	2,284,228	504,193	1,274,223	746,914
1931	481,384	476,407	1,902,771	427,924	1,388,942	1,126,227
1932	428,842	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	1,604,568	1,063,271	4,167,285	925,448	3,590,114	1,587,971
1935	1,469,971	1,879,028	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
1937	4,124,885	2,635,676	6,503,048	1,866,674	8,152,960	5,183,197

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
1929	13,949	7,913,875	77,039	16,032,609	6,610	1,714,285	9	52,151
1930	10,914	4,415,105	115,420	14,795,641	136	1,578,456	8	109,278
1931	3,953	4,865,869	88,083	10,369,400	1,161	1,082,559	6	22,251
1932	9,748	4,638,302	99,809	9,886,162	1,461	599,177	11	12,104
1933	58,600	7,720,547	195,005	21,553,794	1,269	1,470,000	3	14,006
1934	26,378	11,243,516	387,750	34,750,828	703	1,358,357	2	6,280
1935	13,265	14,784,166	374,319	43,914,591	10,042	1,776,216	2	13,276
1936	46,457	19,059,308	397,242	45,081,810	1,622	1,695,975	21	242,815
1937	51,085	21,067,519	281,302	50,951,124	1,944	1,385,897	18	4,260

Year	Transformers		Rectifiers		Electric Fans		Electric Heaters		Insulated Wires		Cables	
	No. Produced	Value	No. Produced	Value	No. Produced	Value	No. Produced	Value	No. Produced	Value	No. Produced	Value
1929	329,388	12,330,728	2,393	189,520	79,834	1,719,114	255,848	1,904,604	36,651,108	21,315,991		
1930	387,333	9,307,652	3,628	160,218	88,047	1,855,294	218,797	989,583	27,134,916	18,051,756		
1931	341,561	5,883,660	275	315,327	44,019	761,538	535,869	1,130,569	21,441,985	10,421,985		
1932	290,887	6,618,334	2,881	156,547	35,328	610,008	542,768	1,311,409	26,329,442	10,189,503		
1933	324,167	9,976,642	1,097	278,657	46,041	866,070	733,819	1,415,757	39,487,609	17,650,301		
1934	416,970	15,400,423	3,640	238,892	76,234	1,188,010	985,948	2,124,990	42,929,887	16,185,546		
1935	288,774	19,936,149	19,588	523,097	45,342	911,892	912,524	2,646,725	56,721,405	21,920,622		
1936	202,606	26,259,229	11,277	781,886	97,484	1,070,406	722,452	2,527,817	65,799,222	36,591,859		
1937	261,737	35,126,286	10,482	915,674	110,434	2,592,883	772,140	3,986,756	98,875,009	61,054,819		

PRODUCTION OF ELECTRICAL INSTRUMENTS
(Value in yen)

Year	Electric Batteries		Dry Cells		Total Value	Other Electrical Instruments		
	Instruments for Wireless Communication Value	Instruments for Telegraphic & Telephonic Comm's Value	Storage Batteries No. Produced	Value				
1929	4,714,704	9,111,019	793,456	6,480,389	25,881,277	5,940,331	12,420,720	39,624,228
1930	6,357,315	9,109,054	205,753	4,144,403	70,576,043	9,858,359	13,802,762	20,294,850
1931	9,582,428	6,284,448	206,278	3,337,901	23,552,992	4,242,700	7,580,601	21,929,303
1932	11,552,221	7,034,435	281,980	3,425,373	33,032,783	5,172,392	8,597,765	24,167,329
1933	19,293,426	7,696,588	358,871	4,919,752	41,729,522	6,636,878	11,456,635	39,175,923
1934	26,420,734	13,143,143	154,111	6,575,986	51,425,306	7,268,713	13,844,699	50,722,078
1935	24,591,013	12,824,613	101,984	7,566,928	69,600,657	8,513,616	16,080,544	78,233,349
1936	59,816,291	131,520	131,520	8,235,060	79,696,249	8,287,764	16,502,824	79,232,599
1937	80,746,200	165,746	165,746	15,283,967	84,883,048	11,165,184	26,449,151	99,511,612

PRODUCTION OF ELECTRIC BULBS, SEARCHLIGHTS, etc.

Year	Electric Bulbs		Searchlights		Others Value	Total Value
	No. Produced	Value	No. Produced	Value		
1929	134,183,114	17,763,744	10,344	2,464,676	2,507,385	22,736,805
1930	114,811,775	15,192,305	20,752	2,400,744	3,539,177	21,132,225
1931	202,054,444	18,038,888	—	963,606	3,459,829	22,467,323
1932	286,653,068	19,685,338	169	831,379	4,692,485	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
1937	332,822,266	28,820,274	116	351,477	17,868,915	47,040,666

PRODUCTION OF LOCOMOTIVES AND ROLLING STOCK
(Value in yen)

Year	Steam Locomotives		Electric Locomotives		Gas Locomotives		Fittings, etc. Value	Total Value
	No. Produced	Value	No. Produced	Value	No. Produced	Value		
1929	229	13,629,665	36	1,285,567	78	484,280	2,631,372	18,030,884
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	2,976,606	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
1937	435	25,009,198	50	1,775,408	725	4,557,331	8,802,674	40,144,611

Year	Coaches and Freight Cars		Electric Cars		Rikisha		Waggons Value		
	No. Produced	Value	No. Produced	Value	No. Produced	Value			
1929	3,996	14,532,052	919,049	535	5,882,521	1,618,233	1,668	107,750	184,914
1930	3,831	9,306,425	1,582,700	355	3,607,416	3,672,732	947	75,610	161,005
1931	1,508	3,881,066	221,088	180	2,019,861	1,492,455	1,448	72,060	165,710
1932	1,106	3,980,922	181,345	178	1,259,789	213,155	489	50,400	458,515
1933	1,452	8,064,776	853,179	129	1,063,722	501,857	550	58,220	341,099
1934	2,640	15,070,988	2,703,857	189	1,530,634	285,731	848	64,561	118,757
1935	4,804	18,986,601	3,035,150	237	2,783,499	225,086	760	62,660	216,087
1936	6,201	21,547,844	10,854,654	199	2,353,285	2,684,690	40	8,000	67,249
1937	8,882	20,092,279	13,010,064	383	5,951,990	5,404,922	650	64,750	183,674

Note: In all the tables given above the value does not necessarily correspond with the number of production, because it includes value for production the number of which is not clearly reported.

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. Mohei 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, manufacturers have received good orders from public bodies who have raised subscriptions to donate 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 aircrafts at present are as follows:

MANUFACTURERS OF AIRCRAFT

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.

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

The Tokyo Gas and Electric Co., Ltd., began to manufacture military automobiles "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 Hakuyosha, 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 176,000 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		Accessories and Parts Value	Total Value	Motor Cycles	
	No.	Value	No.	Value			No.	Value
1926								18,624,309
1927								25,256,332
1928								43,049,420
1929	11,221	12,484,951	18,058	71,177,299	6,219,850	89,884,750	204	112,925
1930	20,596	34,903,822	1,254	3,628,252	4,493,958	43,024,032	793	413,808
1931	19,935	32,099,508	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	29,889	75,955,529	2,770	15,671,197	22,736,076	114,362,802	7,750	6,029,283
1935	27,021	69,928,985	5,307	22,908,967	26,234,962	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, ¥32,589,000 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)		
		Value	Value of Accessories	Total Value
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	13,770,655	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	896	3,357,061	28,945,163	32,302,224
1935	943	3,302,241	29,387,106	32,689,347
1936	1,117	3,577,000	33,459,000	37,036,000
1937 (Jan.-July)	695	3,009,000	27,673,000	30,682,000

Note: Details of conditions of the industry and the trade in automobiles are not published.

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 1913, 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 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.

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	Accessories Produced
1929	90,285	2,593,051	16,138,063
1930	136,985	2,790,331	12,206,374
1931	105,038	2,022,013	13,747,235
1932	63,988	1,315,748	20,666,605
1933	118,405	2,164,804	26,396,495
1934	152,920	2,542,376	34,462,225
1935	90,885	2,260,889	38,889,853
1936	145,791	5,210,056	44,044,488
1937	138,895	2,977,815	50,889,157

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

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

Year	Imports	Exports
	(In yen)	
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	17,436,446
1936	27,000	20,575,000
1937	—	23,451,000
1938	—	13,650,000

Note:—Tyres are not included.

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 58,763 tons.

Owing, however, to the subsidies granted by the Department of Communications 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.)

PRODUCTION OF VESSELS

(Value in yen)

Year	Steel Vessels		Ships Other Classes		Total Value	Fittings of Ships
	No.	Value	No.	Value		
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
1937	581	208,820,307	4,578	16,503,625	225,323,932	2,472,764

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

End of	Dockyards	Officials	Technicians	Operatives	Others	Total
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
1937	559	3,874	5,019	89,736	2,532	101,161

Trade in Machinery

Imports of Machinery

Imports of machinery in 1938 totalled ¥313,358,000 against ¥242,235,000 for 1937.

Imports of machinery by Japan, excluding automobiles and their acces-

sories, 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.)

IMPORTS OF MACHINERY (In ¥1,000)

Articles	1932	1933	1934	1935	1936	1937	1938
Watches, and parts thereof	2,953	2,094	2,684	4,021	3,742	5,645	2,893
Clocks, and parts thereof	147	112	191	170	299,205	—	192
Microscopes, etc.	255	126	230	279	301	394	156
Ammeters, voltmeters, etc.	101	78	64	60	2,711	3,263	1,694
Wattmeters	211	99	63	74			
Other meters	1,074	1,526	1,479	2,246			
Surgical or orthopaedic instruments	311	156	200	238	118	249	129
Surveying and drawing instruments	363	812	97	515	256	385	790
Registers, calculating machines, typewriters, etc.	590	574	1,020	1,247	2,001	2,012	150
Scientific instruments	1,039	1,049	1,003	1,529	1,265	2,698	1,414
Cameras, and parts thereof	966	765	1,418	2,582	3,949	6,392	1,209
Musical instruments	296	185	182	197	240	319	119
Telegraphic and telephonic instruments	1,664	2,989	1,468	1,513	1,292	1,939	3,478
Fire-arms	5,826	6,451	1,031	1,117	—	—	—
Railway carriages, and other vehicles	—	—	—	—	44,677	58,791	63,517
Boilers	1,192	1,796	4,090	6,109	3,930	5,286	5,560
Fuel economizers	—	—	393	732	329	166	462

Articles	1932	1933	1934	1935	1936	1937	1938
Steam turbines	182	58	430	1,331	1,385	1,055	411
Internal combustion engines (weighing not more than 250 kg.)	2,292	1,826	3,253	343	—	—	—
Internal combustion engines (weighing not more than 2,500 kg.)	9,507	13,954	17,277	14,801	—	—	—
Internal combustion engines (others)	667	366	247	413	—	—	—
Water-turbines and Pelton wheels	9	—	150	90	15	8	163
Dynamos, motors, etc. (weighing not more than 100 kg.)	1,405	1,372	629	1,044	—	—	—
Dynamos, motors, etc. (weighing not more than 5,000 kg.)	231	192	145	209	—	—	—
Dynamos, motors, etc. (others)	4	166	248	1,003	1,805	1,841	2,766
Transformers	111	64	85	75	—	—	—
Dynamos combined with motive machinery	47	112	2	6	—	—	—
Cranes	4	58	12	7	—	14	397
Capstans and other winding machines	34	117	35	90	86	193	—
Gas compressors	809	669	1,742	1,053	1,815	2,318	2,522
Sewing machines and accessories	3,265	2,183	5,866	6,473	7,939	10,574	386
Pumps	370	726	999	711	760	1,257	1,947
Blowing machines	161	145	231	192	591	790	400
Hydraulic presses	6	4	54	1,480	31	146	445
Pneumatic tools and machines	276	256	638	587	634	789	433
Metal or wood-working machines	5,807	16,246	21,433	18,295	—	—	—
Spinning machines	7,998	3,520	6,394	4,612	2,278	3,103	1,635
Weaving looms	106	12	40	224	—	—	—
Tissue-finishing machines	342	116	62	264	238	384	—
Knitting machines	75	82	1,773	1,645	410	709	234
Paper-making machine	37	9	—	616	284	418	1,325
Printing machines	291	20	224	502	400	754	331
Card clothing	—	—	—	3,869	1,911	2,309	441
Felt for paper making	—	—	—	1,250	1,340	1,547	838
Rolls and rollers	—	—	—	916	576	473	482
Milling-cutters, gear-cutters, etc.	—	—	—	417	434	757	844
Handicraft and agricultural machines	—	—	—	1,287	1,451	2,285	428
Total including others	—	—	—	—	153,087	242,235	313,358

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

Exports of Machinery

In 1938 Japan witnessed the highest record in exports of machinery of her own making. The value of exports was ¥267,237,000. 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:

	1935	1936	1937	1938
	(In ¥1,000)			
Hanging clocks	1,567	1,584	2,083	1,333
Table clocks	1,832	1,916	2,442	1,096
Surgical instruments	2,203	2,516	3,390	3,330
Electric batteries	1,723	1,909	2,262	3,233
Meters	1,318	1,543	2,270	3,097
Physical and chemical instruments	1,217	1,204	2,553	1,486
Musical instruments	628	693	850	786

	1935	1936	1937	1938
	(In ¥1,000)			
Telephonic instruments	5,066	5,562	6,663	10,043
Phonographs	3,601	4,491	5,225	5,384
Measuring instruments	709	1,239	2,104	1,570
Steam boilers	1,901	1,731	3,580	4,405
Motors and dynamos	2,811	—	—	—
Transformers	1,243	—	—	—
Switch boards	653	15,963	15,773	26,613
Other electrical machinery	3,334	—	—	—
Pumps	1,622	1,952	2,917	5,246
Metal or wood working machinery	1,941	4,907	6,233	10,324
Spinning machinery	8,977	—	—	—
Weaving machines	3,568	15,121	25,440	29,984
Printing machines	1,104	1,000	1,446	2,197
Locomotives	13,776	15,087	9,314	16,338
Railway carriages and other vehicles	—	58,810	61,478	57,148
Ships	—	8,165	23,148	16,756
Cranes	1,122	1,417	1,740	3,868
Internal combustion engines	1,910	4,058	4,685	4,995
Sewing machines	365	575	1,037	651
Total including others	—	174,541	227,699	267,237

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. Important items of electric industry are not made public since October, 1937.

ELECTRIC POWER GENERATED FOR INDUSTRIAL PURPOSES

(in kw.)			
End of	Hydro-electric	Thermal	Others and Total
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	1,813,508	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
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

ELECTRIC LIGHTING IN VARIOUS PREFECTURES AT THE END OF 1935

(Number of lights per 100 persons)

Prefecture	No.	Prefecture	No.	Prefecture	No.
Tokyo	123.8	Yamanashi	36.4	Osaka	87.4
Kanagawa	87.2	Aichi	70.6	Kyoto	125.6
Saitama	43.4	Miyé	50.3	Hyogo	83.0
Gumma	45.4	Gifu	54.3	Nara	84.7
Chiba	40.6	Nagano	49.3	Shiga	57.0
Ibaraki	27.9	Fukui	75.4	Wakayama	59.4
Tochigi	35.7	Ishikawa	70.7	Tokushima	44.0
Shizuoka	57.0	Toyama	58.5	Kochi	45.1
Nagasaki	38.9	Miyazaki	39.7	Niigata	50.4
				Yamagata	36.4

End of	Hydro-electric	Thermal	Others and Total
1936	3,759,334	2,924,778	6,777,422
1937	—	—	7,276,829
1938 (Oct.)	—	—	7,529,673

TOTAL VOLUME OF ELECTRIC POWER GENERATED FOR LIGHTING AND INDUSTRIAL PURPOSES

(In kw. h.)		
Year	Total	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

End of	No. of Consumers	No. of Lamps
1927	10,547,235	32,322,991
1928	10,847,432	33,909,420
1929	11,170,618	35,893,353
1930	11,352,372	36,839,607
1931	11,446,539	37,413,988
1932	11,530,440	38,048,413
1933	11,383,235	38,382,771
1934	11,715,694	40,532,219
1935	11,948,953	42,477,828
1936	12,176,098	44,405,699
1937	12,568,725	46,969,219

ELECTRICITY

501

Prefecture	No.	Prefecture	No.	Prefecture	No.	Prefecture	No.
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
1932	Opened	368	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
1938 Oct.	Opened	—	—	—
	Unopened	—	—	—
	Total	—	—	—

Year	Paid-up Capital	Profit	Rate of Profit against Paid-up Capital
1935	4,124,389,526	225,730,583	5.5
1936	4,296,016,000	289,414,000	6.8

According to the report of the Ministry of Commerce and Industry on the business conditions of 403 electric companies in 1937 the aggregate capital amounted to ¥3,149,087,285, reserve fund ¥204,320,669, net profit ¥195,560,074, dividend ¥171,874,648. According to the report of the Ministry of Communications the total number of electric companies, electric railway companies, self-supplying factories and governmental offices was 10,627 at the end of October, 1938, and the total amount of capital of electric companies and electric railway companies reached ¥5,631,266,861.

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:

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
1930	3,180,810,000	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	3,956,696,518	205,005,470	5.2

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	1,686,288
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	466,466
Chemical Industry	2,896,845	2,415,964	4,044,205	5,051,275	5,895,349
Ceramic Industry	459,504	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-electric power 45 per cent. The rate of increase in the past 10 years was

95 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	189,642	5,436,608
Completed	3,651,547	107,787	3,759,334
Under Construction	1,595,419	81,855	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	17,476	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 44,405,699, 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.	Percent- age
Fibre and Textiles	647,477	13
Metal Works	876,988	17
Machine and Tool Mfg.	286,024	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 existing 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 experienced 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 rais-

ing 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 ¥780,000,000 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 ¥526,640,000; 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 ¥2,870,000,000.

Start of the New Company The special commission for the valuation of the fixed assets and rights of the existing companies came, on December 14, 1938, to the conclusion that the total amount of their value for 33 electric companies reached ¥653,100,000, and decided on the capital of the new company as ¥753,100,000, adding to the above, another ¥100,000,000 which is to be obtained by floatation of shares. Of the 33 companies those companies which were valued as surpassing ¥10,000,000 were as follows:

Tokyo Electric Light Co.	¥136,700,000
Daido Electric Power	102,300,000
Nippon Electric	100,600,000
Kwansai Kyodo Electric	57,800,000
Toho Electric Power	40,600,000
Uji-gawa Electric Power	35,800,000
Sanyo Central Electric	18,000,009
Kyushu Electric	17,000,000
Hiroshima Electric Power	16,500,000
Showa Electric Power	15,800,000
Yamaguchi Prefectural Electric	15,600,000
Chugoku Godo Electric	12,600,000

On April 1, 1939, the members of the Board of Directors were appointed and the arrangements with other companies involving the taking-over of staffs and employees and the transfer of assets and equipment were completed. The important contract in respect of the taking-over of electric power amounting to 2,200,000 kilowatts from fifty-two companies and of the supply of 3,400,000 kilowatts of electric power to seventy companies has been executed smoothly.

The company enjoys no privilege in the way of exemption from taxes but debentures it issues have the guarantee of the Government, so that the company will have no difficulties in matters of finance.

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:

	Coal Consumed	Output	Amount Supplied to Consumers	No. of Consumers	No. of Lights and Burners	Byproducts		Gas Motors	
						Coke	Coaltar	Num-	Horse-
	Metric ton	Thousand cubic metres	Thousand cubic metres			(Unit: metric ton)	(Unit: 1,000 litres)	ber	power
1932	1,283,216	734,188	712,717	1,785,205	3,921,620	851,268	66,032	437	12,517
1933	1,402,000	770,447	709,967	1,866,369	4,145,549	933,596	73,252	476	13,947
1934	1,461,000	1,046,639	741,787	1,906,409	4,242,215	971,242	75,923	528	42,486
1935	1,522,000	1,219,746	771,534	1,995,000	4,453,919	1,012,443	83,865	529	41,777
1936	1,614,000	858,965	810,095	2,112,000	5,771,537	1,068,968	86,204	548	45,023
1937	2,243,000	—	859,424	2,233,000	6,173,970	1,134,220	90,162	653	42,977

BUSINESS RESULTS OF GAS COMPANIES

(In ¥1,000)

March	Paid-up Capital	Fixed Assets	Profit	Percentage of Profit against Fixed Capital	Dividend Rate
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
1938	326,654	402,211	54,035	13.4	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 ¥6,257,000 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 in-

crease 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 Konoké 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 1938 the number of warehouses managed by the member companies of the Japan Warehouse Association was 188, the value of commodities stored, being, on the average throughout the year, ¥773,045,000. According to an investigation made by the Department of Commerce and Industry, the number of warehouse managements in the country totalled 482, capitalized with ¥178,805,734, and profit gained ¥5,046,841 in 1937.

Value of Commodities The quantity and value of commodities stored in the warehouses were as follows:

STOCKS IN WAREHOUSES IN JAPAN PROPER

(According to the Japan Warehouse Association)

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
1930	98	23,691	483,436	99	24,866	603,941	97	21,270	356,844
1931	96	22,322	432,715	96	22,113	458,917	96	24,134	410,988
1932	97	28,732	510,957	98	29,712	546,683	98	23,134	486,144
1933	101	27,041	577,555	99	28,901	629,965	105	28,892	585,085
1934	107	37,467	719,276	108	40,208	775,846	107	33,016	661,809
1935	108	31,750	645,913	107	33,449	686,155	111	27,284	537,809
1936	127	29,461	614,381	114	30,935	683,639	155	26,026	539,635
1937	173	33,020	807,692	175	34,045	936,759	183	33,550	722,408
1938	186	33,933	773,045	187	35,891	762,675	188	30,967	718,828

Stocks in Warehouses by Districts

End of	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
1930	19	4,825	144,265	14	9,099	146,342	64	7,345	66,236
1931	19	6,020	159,453	14	9,581	164,500	63	8,532	87,033
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	202,383	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	149,889
1937	24	6,054	166,143	21	9,822	302,009	138	17,674	234,256
1938	27	5,564	199,322	21	8,801	279,648	140	16,602	239,658

STOCKS IN WAREHOUSES BY IMPORTANT COMMODITIES

(Quantity in 1,000 parcels)

At the end of	1930	1931	1932	1933	1934	1935	1936	1937	1938
Rice	4,188	10,386	9,966	14,381	18,630	9,714	6,525	7,729	6,906
Other Cereals and Flour	1,186	1,741	1,384	2,118	2,267	2,870	2,870	3,804	3,802
Sugar	894	1,597	2,637	2,156	818	910	1,011	1,420	654
Foodstuffs	4,443	1,911	1,464	1,493	2,373	2,776	3,914	3,264	3,257
Cocoon	247	269	246	338	218	211	298	369	306
Cottons	103	83	242	368	383	127	303	149	117
Wool, etc.	23	75	115	153	126	139	77	114	88
Yarns	240	309	212	194	223	245	173	547	535
Textiles	158	219	165	305	301	1,162	362	961	817
Paper and Materials	1,233	1,022	541	418	680	810	720	71	679
Fertilizers and materials	3,882	3,026	2,400	1,959	1,610	2,127	2,550	2,738	2,522
Iron and Metal Manufactures	2,516	1,856	1,603	3,303	2,809	3,452	3,826	5,027	5,502
Chemicals, Dyestuff, Fats	615	605	470	472	572	914	1,181	1,017	852
Total	21,270	24,134	23,134	28,892	33,016	27,284	26,026	33,550	30,967

(Value in ¥1,000,000)

At the end of	1930	1931	1932	1933	1934	1935	1936	1937	1938
Rice	29.0	77.2	86.7	122.3	198.2	108.7	75.3	89.5	87.1
Other Cereals and Flour	7.1	6.4	14.6	9.5	15.3	19.3	27.9	36.6	38.4
Sugar	14.2	22.2	46.9	39.5	12.4	15.1	15.3	26.9	12.5
Foodstuffs	24.5	24.0	21.0	18.1	30.7	35.4	43.5	43.0	53.0
Cocoons	10.4	10.6	15.2	18.2	9.6	15.2	17.2	20.1	16.6
Cotton	14.5	9.6	46.1	68.1	82.7	22.8	68.3	22.8	8.4
Wool, etc.	8.0	21.6	43.9	35.1	37.2	21.1	22.2	41.5	26.1

UTILITIES

Yarns	103.1	119.2	126.6	123.3	115.8	102.3	77.3	103.4	94.9
Textiles	23.4	24.9	21.1	44.2	45.1	49.4	43.9	81.4	142.3
Paper and Materials	49.5	42.6	29.0	22.2	25.5	31.3	29.6	41.9	37.9
Fertilizers and Materials	15.7	17.0	12.7	7.6	6.6	9.6	15.5	19.3	15.1
Iron and Manufactures	24.7	17.1	14.6	27.4	22.6	36.0	34.9	73.0	77.7
Chemicals, Dyestuff, Fats	12.7	10.7	9.3	13.7	12.9	17.5	21.4	32.8	30.4
Others	23.6	21.0	20.1	26.5	33.7	37.3	48.2	89.7	77.8
Total	356.8	410.9	486.1	585.0	661.8	537.8	539.6	722.9	718.8

CHAPTER XXI

FOODSTUFFS

(Manufactured)

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 4,890,000 bags, valued at ¥9,950,000. 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 1,600 koku with a

value of ¥7,500. In 1902 they had increased to 38,000 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 9,000 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 production in 1938 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. In 1938, the wheat production was estimated at over 10 million koku, but on account of the damages by typhoon and the attack of insects and bacteria the actual crop was reduced to 8,900,000 koku.

PRODUCTION OF DOMESTIC WHEAT AND ITS ACREAGE

Year	Production koku	Acreage cho
1930	6,124,000	491,000
1931	6,405,000	501,000
1932	6,497,000	508,000
1933	8,013,000	618,000
1934	9,450,700	648,000
1935	9,655,824	663,868
1936	8,961,329	688,959
1937	9,996,048	724,602
1938	8,971,563	725,100

QUANTITIES OF WHEAT IMPORTED

(Quantities in piculs)

Year	Countries from Which Imported					Total including others (In 1,000 yen)	Value (In 1,000 yen)
	China	U.S.A.	Canada	Australia	Manchou-kuo		
1931	23	884,210	2,597,625	8,554,294	—	12,039,531	32,935
1932	—	195,634	1,983,110	10,264,635	—	12,443,434	49,572
1933	—	49,367	1,874,606	6,593,331	—	8,520,470	44,384
1934	17,820	2,220,803	1,325,549	4,455,025	—	8,155,061	40,748
1935	3,000	45,994	881,786	5,558,084	—	7,417,300	43,199
1936	321,947	61,818	164,000	2,812,246	236,149	5,171,076	33,650
1937	25,202	18,860	65,500	1,679,998	205,988	3,114,102	29,604
1938	53,665	—	—	510,235	298,172	1,104,416	9,557

EXPORTS OF WHEAT FLOUR

(Quantities in piculs)

Year	Countries to Which Exported					Value (In 1,000 yen)
	Manchoukou	China	Kwantung Province	Dutch East Indies	Others and Total	
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	736,486	89,965	1,065,858	19,500	2,165,330	17,621
1937	231,900	1,283,384	1,047,577	9,700	2,683,066	30,745
1938	1,198,597	1,880,771	1,679,180	200	4,758,869	60,715

FLOUR PRODUCTION, CONSUMPTION, ETC

(In bags)

Year	Production	Import	Export	Home Consumption and in Stock
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	1,04,000	5,852,000	33,242,000
1937	38,335,000	410,000	7,251,000	31,159,000
1938	42,964,000	19,000	12,862,000	30,121,000

Note: A bag=37 kin.

Flour Industry in 1938

The wheat flour industry which had been dull in the first half of 1937 was quickened into activity in the second half, and the monthly production in 1938 always kept the mark of over 3 million bags and the total for 1938 was 42,964,000 bags according to the investigation of the Nisshin Flour Company, (The Department of Commerce and Industry puts it as 41,971,000 bags). It is an increase of 4,679,000 bags or 12 per cent over the previous year.

The home consumption of wheat flour remained almost the same as that for the previous year, while the exports showed a great increase with the total volume of 4,758,869 piculs valued at ¥60,-

715,000 which represents an increase of 77 per cent in volume and 97 per cent in value over the previous year, mainly because of a greater demand in Manchoukuo and North and Central China where peace and order was restored. Manchoukuo bought 1,198,597 piculs as against 231,900 piculs for 1937. China who had bought only 17,133 piculs in 1934, bought as much as 1,880,771 piculs in 1938 setting the highest record in the recent years.

The price was high all through the year with the rise in price of wheat and Tokyo futures fluctuated between ¥4.73 and ¥5.10 per bag, making an average of ¥4.93 for the year, 3 sen cheaper as compared with the previous year.

Sugar

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 13,000,000 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 and the South Sea Islands 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 (Beet)	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

Year	Formosa	Japan Proper	Hokkaido (Beet)	Korea	South Sea Islands	Total
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	16,496	1,715	694	—	1,241	20,210
1938-1939*	22,650	2,063	687	—	1,274	26,739

* Estimate

Source: The report of the Japan Sugar Association.

EXPORTS OF REFINED SUGAR BY DESTINATION (In piculs)

Year	China	Manchou-kuo	Kwan-tung	Total including Others
1930	3,007,528	114,804	326,541	3,637,298
1931	1,695,667	88,922	370,810	2,622,211
1932	466,877	54,790	799,840	1,369,507
1933	901,525	96,703	1,015,941	2,172,317
1934	1,041,527	162,255	715,093	2,019,868
1935	1,481,898	227,369	792,578	2,669,213
1936	905,171	193,222	1,780,225	2,978,643
1937	1,159,358	216,087	1,001,814	2,482,145
1938	701,882	293,775	1,271,669	2,267,853

IMPORTS OF REFINED SUGAR BY ORIGINS (In piculs)

Year	Java	Others & Total
1929	3,673,640	3,795,281
1930	4,072,494	4,077,603
1931	3,304,251	3,305,275
1932	644,927	671,299
1933	2,184,499	2,210,124
1934	1,727,188	1,732,188
1935	2,323,117	2,341,841
1936	3,396,964	3,900,079
1937	2,698,347	2,845,068
1938	635,183	639,858

SUPPLY AND DEMAND OF SUGAR IN JAPAN PROPER

(Compiled by the Formosan Government-General)

(In 1,000 piculs)

	1933	1934	1935	1936	1937	1938
Production in Japan proper	2,118.7	1,946.1	2,316.8	2,505.2	2,237.4	2,410.3
Imports from foreign countries	2,210.1	1,732.1	2,341.8	3,600.0	2,845.0	639.8
Imports from territories	10,541.1	11,616.3	15,152.5	13,076.6	13,043.4	12,411.8
Exports to foreign countries	2,172.3	2,019.8	2,669.2	2,978.6	2,482.1	2,267.8
Exports to territories	162.3	211.4	227.9	241.2	236.5	245.0
Consumption in Japan proper	12,535.3	13,063.3	16,914.0	15,962.0	15,407.2	12,949.1
Consumption per capita (Unit: kin)	18.56	19.06	24.30	22.61	21.52	17.85

Various Sugar Companies

The following table shows capaci-

ties, standings, etc., of the principal sugar companies in Japan as of 1937-1938:

CAPITAL, CAPACITIES, ETC. OF SUGAR COMPANIES

1937-38

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 (piculs)	Refined (piculs)
Taiwan Seito Co., Ltd.	63,000,000	43,080,000	11,814	432	4,510,000	1,333,000
Dai-Nippon Seito Co., Ltd.	61,970,000	56,332,500	11,619	810	3,977,000	1,179,000
Ensuiko Seito Co. Ltd.	60,000,000	36,937,500	5,250	400	2,506,385	915,522
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	20,050,000	3,774	—	1,070,000	—
Showa Seito Co., Ltd.	15,000,000	11,250,000	3,930	—	861,628	—

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 fifteen breweries with a total capacity of about 2,000,000 koku.

At the end of February	No. of Brewery	Production of Beer (In Koku)
1930	14	846,014
1931	14	797,544
1932	14	797,283
1933	14	959,762
1934	14	980,175
1935	14	1,047,213
1936	15	1,312,496
1937	15	1,275,055

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 fourteenth 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 1938. The amount of beer production of four major companies in 1938 reached 1,476,000 koku, an increase of 215,000 koku or 17 per cent over the previous year.

Exports of Beer. The exports of beer in 1938 amounted to 240,488 koku, an increase of 105,511 koku over the previous year. The exports to Manchoukuo increased by 4,739 koku. China 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	1935		1936		1937		1938	
	Qty	Value	Qty	Value	Qty	Value	Qty	Value
Manchoukuo	29,160	1,196	28,497	1,158	7,507	308	12,246	525
Kwantung L. T.	50,780	2,011	41,466	1,750	52,680	1,980	41,481	1,646
China	11,792	544	12,679	555	23,523	944	149,811	6,034
Hongkong	2,302	116	2,841	149	2,121	106	—	—
British India	1,4167	639	13,926	650	16,959	753	12,986	639
Straits Stmts	2,444	108	2,880	140	2,973	141	—	—
Dutch India	3,669	189	3,108	164	2,481	126	—	—
Others and total	135,107	5,870	132,503	5,912	134,977	5,686	240,488	10,019

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 be-

gun 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 Experi-

mental 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 SAKÉ BY KINDS

(In 1,000 koku)

Year (Oct.-Sept.)	No. of Brew- ery (Sept.)	Refined Saké	Unrefined Saké	White Saké	Sweet Saké	Distilled Saké	Total
1930-31	9,905	3,851	6	6	70	455	4,121
1931-32	9,570	3,284	5	6	87	445	3,829
1932-33	9,236	3,807	5	6	100	509	4,429
1933-34	8,971	4,012	6	6	92	528	4,646
1934-35	8,745	3,772	5	6	87	499	4,371
1935-36	8,580	3,784	5	6	97	534	4,426
1936-37	8,428	3,983	5	5	105	542	4,641

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 shipment of refined saké in the saké year October 1936 to September 1937 amounted to 3,998,369 koku, which is slight decrease from the previous year.

SUPPLY AND DEMAND OF SAKÉ

(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	4,039,128	2,366,661
1936-37	4,378,687	3,998,369	2,314,734

The following are the annual figures for the production of wine in recent years:

PRODUCTION OF WINE

Year March-Feb.)	No. of Winery	Production in koku
1932-33	9,025	7,741
1933-34	10,124	13,613
1934-35	11,710	18,424
1935-36	12,190	19,066
1936-37	12,408	19,276

VALUE OF PRODUCTION OF ALL KINDS OF SPIRITS

Year	Value in yen
1933	399,054,125
1934	384,199,683
1935	404,133,245
1936	435,661,300
1937	543,581,832

Flavours

Oriental flavours are produced in considerable quantities as indispensable for Japanese cooking. The production of soy, or Japanese sauce made of wheat, in factories amounted to 6,072,953 hectolitres valued at ¥82,118,689 in 1937, that of miso, or bean-mash, 215,459 metric tons valued at ¥26,619,372. Saké-lees is used as soup or a soft drink, the production in the same year amounted to 79,813 metric tons valued at ¥8,371,042. The production of vinegar amounted to 461,971 hectolitres valued at ¥2,403,341.

VALUE OF PRODUCTION OF SOY, MISO, ETC.

(Unit: ¥1,000)

Year	Soy	Miso	Vinegar	Saké- lees	Sauce and Ketchup
1933	61,257	16,535	1,953	6,558	3,185
1934	65,477	18,201	2,026	6,114	3,548
1935	65,767	20,124	2,214	6,748	4,163
1936	71,025	22,582	2,051	6,706	4,801
1937	82,118	26,619	2,403	6,371	5,756

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 Hirano-sui". Three years later, some Englishmen taught the making of artificially aerated water and with the importation of Cood'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.

VALUE OF 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	6,976,826	1,676,215	1,073,595	3,721,403	13,447,839
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
1937	10,703,174	2,108,597	2,625,136	6,367,072	21,803,979

CONSUMPTION OF SOFT DRINKS

(In litre)

(Import included)

	Lemonade, etc.	Cider	Soda water, etc.	Fruits Juice, Syrup, etc.	Acid Drinks made from Milk and Milk products
1933	24,152,273	53,684,554	7,384,382	10,036,299	1,224,910
1934	22,728,171	53,705,621	7,334,329	13,522,424	1,659,844
1935	18,298,972	58,474,509	8,013,707	16,211,910	1,729,480
1936	17,566,476	49,663,655	9,628,547	15,600,323	2,132,598
1937	18,486,295	52,177,373	8,291,972	17,673,521	2,752,981

Note: As to ice, milk, etc. see Chapter XXXII, Medicine and Sanitation.

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	1936		1937	
	Quantity	Value	Quantity	Value
Canned meats	2,914,390	2,609,676	5,670,606	5,607,707
Canned fishes	59,034,014	29,989,998	73,214,369	38,345,455
Canned fruit	22,538,061	7,143,832	28,698,403	9,663,009
" vegetable	10,853,720	4,372,457	20,209,783	7,692,875
Other canned food	37,294,046	16,153,693	41,807,328	21,387,540
Total	132,634,231	60,269,656	169,600,489	82,696,586

The exports of canned provisions from Japan for 1938 amounted to ¥92,819,000 showing an increase of ¥5,914,000 over 1937. The low exchange rate was a potent factor to have caused the heavy gain in exports. Of the exports, ¥12,212,000 was for the United States; ¥40,632,000 for the United Kingdom.

VALUE OF PRODUCTION OF BREAD AND SWEETMEAT

(In yen)

Year	Confec-tionaries	Bread (including wheat-gluten)	Mizu-amé (wheat-gluten)
1933	84,979,668	6,062,534	12,841,616
1934	95,088,745	5,870,740	14,020,795

Year	Confec-tionaries	Bread (including wheat-gluten)	Mizu-amé (wheat-gluten)
1935	113,597,091	7,845,029	16,453,729
1936	119,285,645	10,261,173	20,173,231
1937	147,992,513	13,227,103	21,115,889

VALUE OF MILK PRODUCTS

(In yen)

Year	Condensed milk	Batter	Total including Others
1933	10,631,066	1,802,266	18,865,731
1934	9,393,650	2,827,081	21,210,448
1935	10,981,471	3,353,572	22,277,166
1936	10,662,310	3,054,820	24,036,598
1937	14,273,479	4,376,013	32,604,489

VALUE OF PRODUCTION OF ARTIFICIAL BATTER, ETC.

(In yen)

Year	Ham and Bacon	Artificial Batter	Salt	Vermicelli, Buckwheat-vermicelli, etc.	Starch
1933	845,873	409,999	3,502,992	4,947,501	7,131,470
1934	1,185,868	575,965	4,121,651	5,492,733	9,683,397
1935	1,288,078	619,655	4,268,815	6,545,790	12,624,831
1936	1,781,196	928,591	4,168,491	7,716,469	17,018,911
1937	2,570,197	1,403,233	4,720,265	9,256,749	28,298,060

PRODUCTION OF TEA

(Quantity in metric ton, Value in ¥1,000)

Year	Green Tea (Superior)		Green Tea (Common)		Japanese Black Tea		Black Tea		Total including others
	Qty	Value	Qty	Value	Qty	Value	Qty	Value	
1933	122	386	21,874	11,154	2,037	710	17	17	13,462
1934	115	419	22,741	11,891	1,998	756	1,414	842	15,122
1935	194	567	24,788	13,035	2,451	793	1,324	706	16,576
1936	220	555	26,845	15,697	4,641	1,535	552	1,190	19,990
1937	218	459	29,332	20,998	3,258	1,419	4,099	3,741	29,217

The above table is made from the "Factory Statistics" figures, and include only production by the tea makers who employ more than 5 operatives.

Figures of the production by all tea makers are given in Chapter XIII, Agriculture, Tea.

VALUE OF TOTAL OUTPUT OF THE FOODSTUFFS MANUFACTURING INDUSTRY

Year	Value in yen	Year	Value in yen
1928	1,136,544,134	1933	1,017,580,798
1929	1,124,226,990	1934	1,040,681,846
1930	949,929,039	1935	1,159,491,963
1931	834,687,469	1936	1,245,961,247
1932	886,272,905	1937	1,518,338,412

CHAPTER XXII

CHEMICAL INDUSTRY

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 "koko", "mitsumata", "gampi", 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, exports increased and the industry ex-

panded 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 1,418,187,000 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 1938

The economic control in 1937 and 1938 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 1938, therefore, were steady, the exports increasing inspite of a decrease of demand in foreign markets other than the countries in the yen bloc, and the price remained high in general, so that the paper business for the whole year showed as good as the previous 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 According to the report of the Japan Paper Manufacturers' Association the production of paper during 1938 by member companies reached 1,948,455,000 lbs., the quantity sold being 2,030,407,000, a decrease of 180,571,000 lbs. or 8 per cent in the for-

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

mer, and 2,466,000 lbs. or 0.1 per cent in the latter as compared with the previous year. The decrease was mostly accounted for by the decrease in the production and sale of printing paper, although those of paper for daily press and others showed an increase as it is given in the following table:

PRODUCTION AND SALE OF FOREIGN STYLE PAPERS IN THE PAST FIVE YEARS

(Unit 1,000 lbs.)

Year	Printing Paper		Paper for Daily Press		Others		Total	
	Production	Sale	Production	Sale	Production	Sale	Production	Sale
1934	449,407	463,061	686,228	687,283	453,840	455,541	1,591,475	1,605,885
1935	509,259	474,436	736,245	729,585	474,133	476,648	1,719,637	1,680,670
1936	544,194	570,080	768,142	766,534	513,510	536,025	1,825,848	1,872,640
1937	655,573	616,599	825,189	811,291	648,264	604,983	2,129,026	2,032,873
1938	400,799	483,388	857,463	852,696	690,193	694,123	1,948,455	2,030,407

Decrease of Imports The imports of paper in 1938 amounted only to 111,192 piculs, a remarkable decrease of 88 per cent as compared with the previous year. The main reason is to be found in the strict trade control by the Government over the peace time goods, especially in the case of imports.

Increase of Exports But the exports of paper in 1938 amounted to 2,483,851

piculs, an increase of 22 per cent over the previous year. Of the total amount, 2,105,845 piculs or 84 per cent went to the yen bloc areas, China buying more than twice as much as in the previous year. The other countries bought 378,006 piculs or 16 per cent against 621,561 piculs or 30 per cent for 1937. Detailed figures are given below.

PRODUCTION OF PAPER SINCE 1928

(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
1928	355,056	90,172	4,331	1,411	17,704	4,007		
1929	366,709	87,745	3,592	1,206	3,899	1,361	10,662	2,800
1930	369,523	74,055	4,661	1,587	731	243	14,557	2,559
1931	321,711	62,416	3,360	1,120	4,074	1,137	9,567	1,839
1932	217,196	54,566	2,366	818	3,374	1,127	22,655	4,369
1933	346,594	68,705	23,563	5,354	3,342	1,462	27,696	6,300
1934	379,062	84,167	11,684	4,216	3,402	1,980	39,180	10,327
1935	408,671	90,263	17,854	5,480	6,678	2,126	49,049	11,028
1936	434,743	94,795	19,850	5,770	5,103	1,563	57,079	14,862
1937	519,898	119,355	27,788	8,723	5,511	2,071	70,706	21,234

Year	Match Paper		Cigarette Paper		Art Paper		"Hanshi"	
	Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value
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
1937	3,455	1,011	14,281	11,547	14,061	5,381	2,154	9,797

Year	"Minogami"		"Torinoko" and Imitation Paper	Board		Others and Total
	Quantity	Value	Value	Quantity	Value	Value
1928	194	883	7,278	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	6,952	265,238	27,973	250,983
1937	323	1,720	9,853	337,492	38,503	335,646

CONSUMPTION OF FOREIGN-STYLE PAPER

(Statistics of the Nippon Seishi Rengokai)

(Quantity in 1,000 lbs.)

Year	Production	Imports	Exports	Consumption	Consumption per Capita
1928	1,343,479	99,904	133,812	1,262,074	20.2
1929	1,451,526	79,205	136,876	1,351,284	21.1
1930	1,401,711	98,419	169,992	1,281,888	19.9
1931	1,374,899	146,314	141,197	1,338,331	20.4
1932	1,311,315	116,474	87,963	1,391,471	19.0
1933	1,444,104	104,330	105,200	1,480,931	21.2
1934	1,591,474	138,556	101,523	1,643,542	22.6
1935	1,719,637	167,482	112,899	1,764,976	26.8
1936	1,825,848	193,664	126,559	1,889,641	25.6
1937	2,129,026	135,092	135,653	2,041,665	29.0
1938	1,948,455	14,358	146,101	1,859,566	25.0

Note: The figures for consumption are made out by deducting 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	1937	2,395,974	9,645,146

Note: The value is included in the total of the above table.

IMPORTS OF PAPER BY KIND

Kind	Quantity (Unit: picul)			Value (Unit: ¥1,000)		
	1936	1937	1938	1936	1937	1938
	Papers for photograph	10,772	19,029	8,970	1,646	2,486
Printing paper	1,240,956	711,056	55,266	10,164	9,171	718
Imitation parchment, etc.	69,168	114,616	14,734	2,027	3,540	510
Packing paper and match paper	97,435	145,284	28,881	1,474	2,609	383
Imitation Japanese paper and tissue paper	18,817	13,179	3,341	656	994	350
Total	1,437,148	1,003,164	111,192	15,967	18,800	2,886

EXPORTS OF PAPER

Kind	By Kind			By Countries		
	Quantity (Unit: picul)	Value (Unit: ¥1,000)	Quantity (Unit: picul)	Value (Unit: ¥1,000)	Quantity (Unit: picul)	Value (Unit: ¥1,000)
Printing paper	1636	1937	1938	1936	1937	1938
Paste-board	609,137	617,044	678,654	8,174	10,402	12,942
Cigarette paper	347,498	500,996	722,609	2,506	4,485	6,837
Imitation paper	82,703	72,007	104,201	4,480	4,440	5,701
Paper for photograph	175,282	227,544	160,045	2,757	4,447	4,092
Packing paper	—	207,515	297,449	—	2,054	3,952
Hanshi and Mino	71,802	83,125	126,744	1,357	2,101	3,623
Toilet paper	18,690	30,229	36,200	905	1,555	2,898
Ganpi and usuyo	86,326	74,380	83,447	1,448	1,723	2,331
Yoshino and Tengujo	12,090	15,993	15,843	1,223	2,003	1,996
Total including others	3,044	4,504	2,948	630	978	927
	1,688,103	2,033,238	2,483,851	27,545	38,708	52,127

To	Quantity (Unit: picul)			Value (Unit: ¥1,000)		
	1936	1937	1938	1936	1937	1938
Kwantung L. T.	684,844	846,708	1,004,831	9,699	13,814	19,393
China	409,329	302,009	729,946	7,413	6,940	16,149
Manchoukuo	144,293	262,960	371,068	3,008	5,931	8,857
U. S. A.	15,349	16,734	8,418	1,116	1,773	1,497
British India	144,005	198,445	177,366	1,025	1,613	1,123
Dutch East Indies	64,221	83,312	30,414	916	1,830	808
Australia	27,074	57,258	30,837	477	1,176	787
Hong Kong	101,966	120,560	48,548	1,213	1,777	718
Thailand (Siam)	42,522	58,899	31,059	565	921	572
Great Britain	3,958	4,102	2,817	515	802	541
Germany	2,676	2,654	2,995	281	372	529
Philippines	22,563	24,828	19,619	317	404	328
Straits Settlements	23,841	31,223	5,397	360	564	101
Total including others	1,688,103	2,033,238	2,483,851	27,545	38,708	52,127

PRODUCTION OF PULP

(Forest Bureau, Ministry of Agriculture and Forestry)

(In tons)

Year	In Japan			Year	In Man- choukuo		
	In Japan	In Man- choukuo	Total		In Japan	In Man- choukuo	Total
1933	620,039	17,361	637,400	1936	802,565	13,171	815,736
1934	708,996	13,737	722,733	1937	886,978	15,011	901,989
1935	757,477	13,718	771,195	1938 (estimate)	1,001,228	44,000	1,045,228

IMPORTS OF PULP

Country of Origin	Quantity (in ton)				Value (in ¥1,000)			
	1935	1936	1937	1938	1935	1936	1937	1938
U.S.A.	109,013	153,735	188,115	51,511	22,812	31,758	49,181	15,111
Canada	34,354	27,748	51,929	16,787	5,991	4,150	12,619	5,046
Sweden	50,574	56,228	121,681	24,849	7,735	9,735	26,993	6,276
Norway	48,499	55,778	62,146	18,145	13,201	14,621	17,071	5,400
Others	27,414	32,979	42,737	29,616	5,362	6,842	10,855	9,227
Total	269,853	326,467	466,608	140,908	55,101	67,107	116,720	41,059

SUPPLY AND DEMAND OF PULP FOR PAPER
(Forest Bureau, Ministry of Agriculture and Forestry)

(Unit in ton)

	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	900,576
1933	614,139	107,774	738,458	1937	829,684	176,131	1,003,215
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 ferti-

lizers during 1937 was valued at ¥758,754,000, of which ¥387,960,000 were self-supplied fertilizers, while ¥370 million's worth were bought in the market.

General Condition of the Industry

Chemical Fertilizers. 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 1937 and 1938 imports were 922,317 and 564,169 tons respectively. This rock is imported from U.S.A., Egypt, and the South Sea Islands.

Superphosphate production has been gaining steadily and in 1937 its production was 1,582,985 metric tons valued at ¥64,542,455. Production during the past few years is reported by the Ministry of Agriculture and Forestry as follows:

PRODUCTION OF SUPERPHOSPHATES

(In metric ton)

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	1,582,985
1938 (estimate)	1,284,043

Supply and demand of superphosphate in recent years follow:

	Production (1,000 tons)	Exports and Re-exports (1,000 tons)	Consumption in Japan Proper
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	1,582	170	1,379
1938 (estimate)	1,284	190	1,094

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 931,821 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 in recent years follow:

	Production	Imports	Imports from Territories (In metric ton)	Exports	Exports to Territories	Consumption in Japan proper
1930	265,826	302,905	18,065	14,924	83,872	488,000
1931	393,237	224,148	53,260	11,608	41,395	617,642
1932	459,663	118,735	125,123	17,956	67,440	618,125
1933	471,398	108,449	83,722	50,061	62,244	551,264
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	182,024	1,050,388
1937	931,821	224,208	17,318	7,512	180,840	934,995
1938 (estimate)	1,463,875	295,823	76,504	—	262,398	1,573,804

Lime Nitrogen. While lime nitrogen 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. 1937 production was 323,508 tons valued at ¥26,050,622.

PRODUCTION OF LIME NITROGEN

(In metric ton and in ¥1,000)

Year	Quantity	Value
1930	223,383	16,959

Year	Quantity	Value
1931	168,042	8,743
1932	180,583	10,660
1933	223,409	15,159
1934	197,252	14,323
1935	260,632	20,633
1936	290,398	23,276
1937	323,508	26,050
1938 (estimate)	270,655	—

Vegetable Fertilizers. Vegetable fertilizers are many in kind. Bean cake, rape-seed cake, cotton-seed cake, rice bran, etc., come into this class of fertilizers, bean cake being the most important. Supply and demand of bean cake for 1930-1938 were:

SUPPLY AND DEMAND OF BEAN CAKE

(In metric ton)

	Production	Imports	Imports from Territories	Exports	Exports to Territories	Consumption in Japan proper
1930	232,727	889,743	17,451	40,557	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

	Production	Imports from Territories	Exports	Exports to Territories in Japan proper	Consumption in Japan proper	
1934	283,241	646,032	88,411	3,051	800	978,277
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	261,738	394,815	41,262	3,747	584	693,484
1938 (estimate)	280,000	623,054	27,152	2,428	432	927,346

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 converted into manure. (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.

Statistics

According to the report of the Ministry of Agriculture and Forestry the value of production and consumption of various kinds of fertilizers were as follows:

VALUE OF FERTILIZERS PRODUCED IN JAPAN PROPER 1928-1937

(Fertilizers Which Require a Licence for Production)

(Unit ¥1,000)

Year	Animal	Vegetable	Chemical	Mixed	Miscellaneous	Total
1928	22,254	39,667	82,483	53,112	318	197,833
1929	19,619	43,521	87,284	60,116	217	210,756
1930	12,703	30,061	76,953	38,551	62	158,330
1931	13,092	24,083	61,557	25,910	85	124,727
1932	19,678	25,806	81,798	30,659	47	157,989
1933	25,891	31,563	102,026	42,408	47	201,936
1934	30,026	33,338	109,867	42,812	86	216,129
1935	27,612	36,395	150,988	53,528	100	268,625
1936	34,738	41,271	179,178	57,802	113	313,125
1937	38,687	53,676	221,177	70,631	830	385,003

CONSUMPTION OF FERTILIZERS IN JAPAN PROPER

(Unit ¥1,000)

Year	Manufactured under Licence	Fertilizers Sold on the Market			Total	Self-supplied Fertilizers	Grand Total
		Manuf'd without Licence	Balance of Exports and Imports	Raw Materials for mfg. Fertilizers			
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	57,624	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	328,560	605,261
1936	313,102	27,000	76,434	91,594	324,945	355,560	680,505
1937	385,003	33,000	70,314	117,524	370,794	387,960	758,754

NUMBER OF PERSONS ENGAGED IN THE FERTILIZER BUSINESS

Year	Manu- fac- turers	Im- porters	Importers of Fertil- izers from Colonies	Traders	Year	Manu- fac- turers	Im- porters	Importers of Fertil- izers from Colonies	Traders
1928	23,822	1,146	437	45,895	1933	23,033	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
1932	23,218	1,052	434	42,131	1937	23,890	968	455	39,816

Caustic Soda, Soda Ash, Bleaching Powder, Dyestuffs, 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 1937 was 377,000 metric tons while 46,276 metric tons were imported.

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 in-

dustry, 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. Brunner, 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 1937 was 362,141 metric tons and for 1938 it is estimated at 440,760 metric tons.

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.

PRODUCTION AND IMPORTS OF SODA ASH

Production		Imports	
(In metric tons)		(In metric tons)	
1929	43,583	76,116	
1930	57,233	65,206	
1931	93,244	54,336	
1932	134,807	46,434	
1933	272,135	46,447	
1934		170,622	37,139
1935		364,613	38,308
1936		367,205	40,895
1937		377,000	46,276
1938 (estimate)		242,885	21,584

PRODUCTION, IMPORTS AND EXPORTS OF CAUSTIC SODA

Year	Production	Exports	Imports	Supply
	(In metric tons)			
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	110,953	5,116	12,477	118,314
1934	177,771	12,293	9,928	175,406
1935	233,288	17,495	19,936	235,729
1936	284,999	23,911	11,587	272,677
1937	362,141	3,676	27,429	384,005
1938 (estimate)	440,760	11,615	266	429,411

Note: Figures are revised. As to the value see the table given at the end of this chapter.

PRODUCTION AND EXPORTS OF BLEACHING POWDER

Year	Production	Exports	Supply	Year	Production	Exports	Supply
	(In metric tons)				(In metric tons)		
1929	50,756	3,109	57,647	1934	66,165	4,247	61,908
1930	49,471	3,446	46,025	1935	77,080	6,489	70,591
1931	45,005	3,544	41,461	1936	79,228	8,505	70,723
1932	47,485	2,858	44,627	1937	91,283	6,990	84,293
1933	61,142	3,392	57,750	1938 (estimate)	84,712	2,950	81,762

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 amounted to ¥7,837,000 in 1938 while imports was less than ¥100,000.

PRODUCTION OF SOAP BY KIND

(In ¥1,000)

Year	Toilet	Industrial	Medical	Laundry	Powdered	Others	Total
1929	22,090	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	2,558	194	9,584	2,992	1,118	37,691
1934	21,407	1,932	377	13,756	3,331	2,037	42,843
1935	23,326	3,295	477	15,537	4,127	3,491	50,258
1936	23,249	3,742	306	18,223	3,470	2,915	51,908
1937	27,229	4,527	338	18,410	3,987	594	55,087

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 1937 amounted to 97,132 metric tons in contrast to 75,663 metric tons in 1936. 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 328 metric tons in 1937 and 209 metric tons in 1938.

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 1937 was 51,342 metric tons and

rapeseed oil was 34,720 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 501 metric tons in 1937, but decreased to 233 metric tons in 1938.

Statistics for the vegetable and animal oil industry follows:

PRODUCTION OF VEGETABLE OILS

(Compiled by the Ministry of Commerce and Industry)

Year	(In yen)					
	Rapeseed Oil	Sesameseed Oil	Groundnut Oil	Cottonseed Oil	Copra Oil	Soya bean Oil
1929	12,214,398	2,398,899	253,659	3,393,863	2,800,842	13,963,580
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	9,143,974
1932	8,398,297	3,122,444	244,634	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	14,054,936
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
1937	15,167,205	4,282,440	795,892	11,203,765	6,605,668	21,406,556

Year	(In yen)					
	Linseed Oil	Perilla Oil	Paulownia Oil	Camellia Oil	Other Oils	Total Oil
1929	2,945,224	1,442,661	218,218	728,262	3,600,224	44,347,827
1930	1,077,873	2,422,152	207,218	599,905	2,359,477	34,102,586
1931	1,094,542	2,052,760	154,928	428,788	2,134,248	29,211,560
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
1937	2,257,634	10,851,487	341,034	532,615	21,782,918	95,247,214

PRODUCTION OF ANIMAL OILS AND TALLOW

(In yen)

Year	Cod Oil	Herring Oil	Sardine Oil	Whale Oil	Other fish Oils
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	5,257,055
1936	2,366,108	16,506	6,056,412	1,617,192	4,669,603
1937	1,714,517	41,720	3,549,421	1,956,365	12,792,003

(In yen)

Year	Puna Oil	Beef Tallow	Pork Tallow	Other Animal Tallow	Total
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

Year	Puna Oil	Beef Tallow	Pork Tallow	Other Animal Tallow	Total
1931	67,000	712,033	160,981	196,883	2,354,358
1932	75,714	666,015	143,921	52,698	3,653,518
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
1937	349,630	1,508,276	534,257	411,113	22,857,302

PRODUCTION OF VEGETABLE WAX, CANDLES,
AND MANUFACTURES OF OILS

(In yen)

Year	Wood Wax	Candles	Boiled Oil	Hardened Oil	Hardened Wax	Oleine	Stearine	Total of manufactures
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
1937	1,694,821	7,250,847	4,337,093	27,545,731	101,094	684,425	7,209,146	39,877,489

IMPORTS OF VEGETABLE AND ANIMAL OILS, TALLOW
AND MANUFACTURES THEREOF

(In yen)

Year	Olive Oil	Other Vegetable oils	Beef Tallow	Stearine	Oleine	Hardened Oil
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	749,000	6,891,000	1,644,000	107,000	—	124,000
1937	1,234,000	9,720,000	1,949,000	140,000	—	104,000
1938	713,000	2,312,000	431,000	—	—	848,000

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

(In yen)

Year	Perilla Oil	Bean Oil	Rapessed Oil	Fish Oil	Whale Oil	Vegetable Wax	Hardened Oil
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	468,000	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	1,444,583	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	14,548,000	751,000	—	10,195,000
1938	1,227,000	—	2,095,000	—	6,902,000	—	4,651,000

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 1937 the total production in the country by mills employing more than 5 persons was as large as ¥201,710,000 in value, but the figure would be much larger if goods produced by people working in their own homes were included.

Rubber Industry in 1938

According to the report of the South Sea Gum Planters' Association the world production of rubber in 1938 amounted to 672,055 tons and Japan consumed 73,478 tons, standing the sixth among rubber consuming countries. The imports of rubber in the same year reached 784,372 piculs valued at ¥51,374,000 a decrease of 278,228 piculs and ¥47,844,000 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 832 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 year. Figures for the production of rubber manufactures for 1938 are not yet available, but their exports amounted to ¥21,228,000, showing a decrease of ¥9,372,000 from 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 1937		First Half of 1938		Second Half of 1938	
	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	5.2	5.0	1.6	0	4.7	3.0
Borneo Rubber Company	12.0	8.0	4.5	3.0	2.0	0
Malay Rubber Company	19.0	10.0	8.5	4.0	8.6	4.0
Nankoku Industrial Company	13.6	7.0	8.8	6.0	8.1	6.0
Showa Rubber Company	24.5	15.0	20.9	10.0	22.5	10.0
South Sea Rubber Company	24.5	12.0	10.0	8.0	11.1	8.0
Sumatra Development Company	22.2	12.0	11.0	8.0	11.8	8.0
Nippon Sangyo Rubber Company	22.4	15.0	19.3	13.0	20.4	13.0

PRODUCTION OF RUBBER MANUFACTURES IN JAPAN

Soft Rubber Manufactures

(Value in ¥1,000)

Year	Shoes and Other Footwear		Toys	Tyres and Accessories	For Machinery
	No. Pairs units	Value			
1929	37,913,269	24,934	2,318	25,753	2,126
1930	47,290,089	20,379	2,313	19,285	1,420
1931	32,266,482	15,929	3,320	19,454	636
1932	34,294,225	17,352	5,027	24,080	1,173
1933	40,867,480	21,827	5,562	31,826	1,000
1934	44,305,294	25,102	3,547	40,588	491
1935	54,802,185	28,973	4,619	45,907	1,132
1936	44,390,727	31,790	4,984	51,066	859
1937	64,636,802	45,820	5,024	75,086	2,521

Soft Rubber Manufactures

Year	Belts	Rubber Pipes	Others	Total	Hard Rubber Manufactures	Grand Total
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	135,287
1937	13,871	7,560	44,011	193,896	7,814	201,710

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. Majority of the raw rubber consumed in Japan is the production of the Japanese rubber companies which carry plantation work in South Sea Islands.

IMPORTS OF RAW RUBBER AND EXPORTS OF PRINCIPAL RUBBER MANUFACTURES

(In yen)

Exports of Principal Rubber Manufactures

Year	Imports of Raw Rubber	Boots and shoes	Tires for Rikisha, Bicycles and Other Vehicles		Toys	Belts, Hoses, etc.
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	51,636,005	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	10,215,000	—
1938	51,374,000	1,568,000	7,799,000	2,197,000	9,964,000	—

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		Toys (In ¥1,000)	Manufactures of Celluloid			Grand Total
	Quantity metric tons	Value		Combs	Others	Total	
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
1937	14,227	25,391	3,408	2,486	6,985	12,879	38,270

EXPORTS OF RAW CELLULOID AND MANUFACTURES THEREOF

Year	Raw Celluloid		Toys (In ¥1,000)	Celluloid Manufactures			Grand Total
	Quantity metric tons	Value		Combs	Armlets	Others	
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

Year	Raw Celluloid		Celluloid Manufactures					Grand Total
	Quantity metric tons	Value	Toys	Combs (In ¥1,000)	Armlets	Others	Total	
1932	511	875	2,527	1,467	—	1,494	5,490	6,366
1933	1,320	2,363	3,178	3,110	—	2,346	8,635	10,993
1934	1,804	3,303	3,708	4,260	—	3,223	11,191	14,494
1935	2,033	3,469	6,054	4,414	1,083	3,089	15,550	19,021
1936	2,242	3,717	6,338	3,857	1,815	4,271	16,280	19,997
1937	2,100	3,952	7,606	4,854	2,711	5,403	20,574	24,576
1938	1,225	2,730	4,841	2,851	1,064	4,044	13,400	16,130

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 manufactures is produced by mills where less than 5 persons are employed.

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 Teikoku Senryo (Imperial Dyestuffs Manufacturing) Company is another producer of dyestuffs capitalized at ¥5,000,000.

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 manufactur-

ing 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 1938 were ¥2,838,000 in value, and showed a remarkable decrease as compared with ¥16,928,000 for 1937, details of which follow:

IMPORTS OF DYESTUFF

	1936	1937	1938
Colours		(In ¥1,000)	
Basic	796	1,246	145
Direct	3,013	4,708	834
Acid	1,776	2,537	644
Mordant and intermediate	2,006	2,651	389
Vat	2,458	4,079	366
Others	2,355	1,707	460
Total	11,404	16,928	2,838

The domestic production of dyes during 1937 compared with the preceding four years and exports of Japan-made dyes since 1933, 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
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
1937	1,058	5,541	3,812	13,584	775	3,831	493	2,099

Year	Sulphide		Artificial Indigo		Vat Colours		Others		Others and Total Value ¥1,000
	Quantity 1,000kg.	Value ¥1,000	Quantity 1,000kg.	Value ¥1,000	Quantity 1,000kg.	Value ¥1,000	Quantity 1,000kg.	Value ¥1,000	
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	3,684	1,740	4,794	29	506	—	—	33,721
1937	13,160	5,410	2,228	6,264	323	1,303	—	—	45,140

PRODUCTION OF ANILINE AND INTERMEDIATES

Year	Aniline		Others and Total
	Quantity 1,000kg.	Value (In ¥1,000)	
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
1937	4,788	5,081	25,581

EXPORTS OF SYNTHETIC DYESTUFFS

Year	Quantity (Metric tons)		Value (¥1,000)
	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	
1938	6,749	7,768	

Indigo Indigo is one of the indispensable dyestuffs for dyeing Japanese cloth and the material is obtained from

various grasses. The production of this natural material was as follows:

PRODUCTION OF INDIGO BALLS

Year	Coarse Indigo		Indigo Balls		Year	Coarse Indigo		Indigo Balls	
	Quantity Metric tons	Value ¥1,000	Quantity Metric tons	Value ¥1,000		Quantity Metric tons	Value ¥1,000	Quantity Metric tons	Value ¥1,000
1933	1,181	396	298	83	1936	1,169	347	320	109
1934	1,176	314	326	105	1937	1,182	346	322	112
1935	1,128	303	269	87					

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 Kobé 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, Calcutta 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
1933	6,061	7,809	5,088	6,349
1934	7,798	10,574	5,630	7,447
1935	12,746	7,322	7,665	6,400
1936	11,051	5,710	5,608	3,207
1937	9,560	8,214	8,844	7,693
1938	—	—	4,621	6,103

VALUE OF PRODUCTION OF CHEMICAL INDUSTRY

(Unit: ¥1,000)

	1935	1936	1937		1935	1936	1937
Industrial Chemicals				Paints:			
Sulphuric acid	37,490	47,870	68,712	Lacquer	1,089	1,072	2,387
Hydrochloric acid	3,412	4,372	5,775	Varnish	7,521	11,318	11,064
Soda ash	27,345	23,145	29,227	Enamel	3,054	6,389	5,940
Washing soda	201	262	227	Paint for boats	1,962	1,963	2,178
Carbonate of soda	2,013	2,253	2,247	Paint for nitrate cotton	1,877	2,383	915
Caustic soda	34,971	34,026	64,197	Shoe-cream	693	825	1,222
Carbide	33,761	36,620	43,893	Total including others	31,414	37,804	46,105
Chromic acid	756	930	1,109	Colours:			
Chromic soda	1,839	1,738	1,991	Colours for painting	1,975	2,771	2,119
Iodine	274	260	405	Indian ink	935	912	1,347
Iodide of potassium	694	297	512	Printing ink	8,155	8,682	8,967
Bleaching powder	5,194	4,256	5,609	Other ink	2,658	4,348	4,844
Compressed gas:				Flowers of zinc	7,005	6,697	11,208
Oxygen	9,234	9,545	9,599	Total including others	32,774	36,715	45,532
Hydrogen	1,234	2,177	1,044	Soap	50,258	51,908	55,087
Chlorine	1,310	1,765	1,536	Articles for toilet:			
Carbon	362	402	503	Perfume	1,191	1,297	1,446
Others	651	496	855	Perfume oil	2,979	3,904	6,093
Total	12,791	14,386	14,338	Tooth powder	10,237	7,534	11,219
Acetic acid	4,308	5,207	6,617	Face-paint	8,289	7,809	7,871
Salicylic acid	555	367	1,128	Beauty-wash	1,030	3,280	4,684
Tannic acid	264	323	334	Toilet-cream	8,344	9,748	12,217
Naphthalene	1,144	2,109	2,005	Total including others	38,110	43,438	49,292
Acetone	231	426	641	Explosives	21,512	25,018	35,918
Methanol	1,296	1,352	2,472	Vegetable oil and wax	70,906	90,157	100,313
Alcohol	1,637	2,595	3,049	Camphor	8,619	8,931	9,676
Ether	1,024	987	1,179	Camphor oil	1,485	1,642	1,281
Glycerine	8,483	10,508	23,136	Peppermint oil and menthol	9,167	9,280	11,149
Phosphorus	1,318	1,379	1,442	Other vegetable volatile oil	954	876	1,317
Glauber's salt	1,358	1,532	2,484	Animal oil and wax	12,418	16,768	22,857
Sulphide soda	1,989	2,108	3,894	Wood wax	2,228	2,463	1,694
Silicic soda	1,575	1,547	1,798	Candles	5,201	7,057	7,250
Chloride of potash	139	112	101	Worked oils	31,309	35,096	39,877
Nitre	775	1,024	1,522	Rubber manufactures	119,027	135,288	201,710
Ammonium nitrate	321	536	551	Phenol manufactures	4,908	7,447	14,973
Magnesium carbonate	3,436	3,694	4,097	Gramophone disk	15,618	19,299	15,263
Chloride of lead	955	824	1,738	Pulp	35,680	47,796	65,415
Alum	733	897	1,054	Paper	224,781	250,983	335,646
Sulphuric aluminium	1,295	1,639	2,112	Celluloid	34,042	33,396	38,270
Others	51,053	119,871	207,359	Vulcanized fibre	4,195	4,017	7,329
Total of Industrial chemicals	244,630	329,467	506,949	Rayon Yarn	160,084	212,974	332,357
Medicines	93,510	113,319	123,573	Film for photograph	3,194	4,666	6,715
Dyestuffs	43,342	46,836	70,730	Dry-plate	2,113	2,042	1,899
Tannin extract	353	198	388				
Artificial perfumery	4,023	4,943	5,250				

	1935	1936	1937		1935	1936	1937
Negative paper	3,695	4,129	5,546	(Electrode)	6,231	9,581	12,106
Fertilizers	250,542	291,531	379,883	Coke	52,358	79,278	150,147
Worked fur	984	626	1,134	Grand total	1,877,578	2,202,362	3,070,245
Glue and gelatine	6,843	5,528	9,084				
Polishing powder	1,334	1,860	2,206				
Other articles for polishing	2,890	3,428	6,247				
Carbon manufactures	8,769	12,455	17,441				

Note: Figures are for production of factories where more than 5 operatives are employed, and do not coincide with figures given elsewhere for certain articles.

CHAPTER XXIII

MISCELLANEOUS INDUSTRIES

The Kiln Industry (Cement, Ceramics and Glass),
Matches, Lacquer-ware, etc.

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 of 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 curtailment 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		Total value in Yen
	Barrels	¥	Barrels	¥	
1930	14,552,558	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	85,081,809
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
1937	33,215,239	102,552,588	2,879,613	7,546,948	110,099,536

CEMENT

537

CONSUMPTION OF CEMENT CLASSIFIED BY USES

(In 1,000 metric tons)

Uses	1936	1937	1938	Uses	1936	1937	1938
Railways	246.7	284.7	241.5	Mining	62.3	101.5	124.1
Electric works	248.1	421.4	510.6	Retails	1,263.8	1,300.7	1,151.0
Harbours	102.2	109.0	97.0	Cement products	111.2	162.1	152.9
Roads and bridges	267.8	239.8	187.4	Miscellaneous	20.6	20.3	27.5
Other public works	373.5	374.6	345.7	Total	3,730.1	4,163.4	3,884.0
Buildings	1,028.7	1,148.9	1,045.8				

EXPORTS OF CEMENT

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

Descriptions	1935		1936		1937		1938	
	Qty	Value	Qty	Value	Qty	Value	Qty	Value
Manchoukuo	3,968	65	3,971	59	222	13	34,354	625
Kwantung L. T.	108,682	2,001	107,198	1,874	13,227	286	45,791	904
China	22,357	237	22,550	250	13,249	138	75,659	911
Hong Kong	70,003	716	54,910	581	15,887	151	9	1
British India	17,185	234	13,497	170	15,558	184	5,380	65
Straits Settlements	84,595	958	90,299	994	81,830	877	34,150	352
Dutch East Indies	44,532	549	48,978	606	84,480	1,044	88,817	1,150
Philippines	1,018	16	2,534	35	8,060	102	60,864	658
Others	302,739	3,301	298,224	3,429	353,795	4,039	146,408	1,746
Total	655,083	8,081	702,164	8,001	586,312	6,836	491,432	6,411

1938 Cement Industry

The China Affair seriously affected the cement industry in 1937 and 1938. The total production of cement in 1937, however, reached 6 million metric tons increasing by half a million metric tons as compared with the previous year. The total production in 1938 reached 5,519,062 metric tons decreasing 514,000 metric tons from the previous year, owing mainly to the halt in construction activities due to the State economic control, and the decrease of demand for Japanese cement in foreign markets.

The restoration of peace and order in Chinese areas occupied by the Japanese forces recovered the exports to China, but the total exports amounted to 491,432 metric tons decreasing by 94,880 metric tons or 16 per cent as compared with the previous year.

The curtailment of capacity in the factories which belonged to the member companies of the Cement Manufacturers' Association had to be kept at an average of 63 per cent throughout the year 1938, and the Association decided on August 18, 1939, to keep 60 per cent curtailment to the end of November, 1939.

CURTAILMENT OF PRODUCTION OF CEMENT

(The Cement Manufacturers' Association)

	Percentage	
	1937	1938
January	63.0	65.0
February	63.0	65.0
March	61.0	63.0
April	58.0	61.5
May	58.0	61.5
June	56.0	59.0
July	56.5	61.0
August	56.0	61.0
September	60.0	64.0
October	62.0	66.0
November	62.0	66.0
December	65.0	69.0

Increase of Stock According to the report of the Warehouse Association the amount of stocks of cement which was 216,099 metric tons in 1937 increased to 258,977 metric tons in January, 1938, to 298,265 in July, and decreased to 228,399 at the end of the year. But it began to increase in January, 1939.

According to the report of the Cement Manufacturers' Association the amount of stocks of cement and clinker combined was 450,353 metric tons in January, 1938, and increased to 525,419 metric tons at the end of the year. The estimate for the end of 1939 is put at 600,000 metric tons.

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. The monthly production capacity of the member companies of the Association in 1938 increased from 900,000 metric tons in December, 1937, to 938,460 metric tons in December, 1938.

EXPANSION OF THE PRODUCTIVE POWER OF THE CEMENT MANUFACTURERS' ASSOCIATION

	(Monthly Capacity)		
	(In 1,000 tons)		
	1936	1937	1938
January	792	836	911
February	792	837	911
March	791	861	911
April	792	861	921
May	793	861	921
June	792	872	917
July	802	873	917
August	802	882	918
September	815	882	917
October	815	882	919
November	815	882	919
December	835	900	938

SUPPLY AND DEMAND OF CEMENT

(Compiled by the Cement Manufacturers' Association)

	(In metric tons)			(In metric tons)		
	Production Capacity Cement	Clinker	Shipments to Japan Proper	Production Capacity Cement	Clinker	Shipments to Japan Proper
1933	4,781,031	4,728,289	3,981,391	1936	4,264,475	4,359,188
1934	4,729,994	4,803,113	3,886,870	1937	4,650,393	4,666,478
1935	4,500,362	4,490,648	3,515,224	1938	4,288,564	4,384,022

	Exports to Foreign Countries	Shipments to Manchoukuo	New Contracts	Outstanding Contracts	Stocks
	1933	489,500	332,184	4,760,700	874,400
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	434,199	12,658	4,943,600	1,015,700	316,400
1938	276,525	—	4,309,600	12,083,209	5,846,300

Note: Figures are for the member companies of the Association alone.

Rise in Cost and Price The rise in cost of production in 1938 badly affected the profit of cement companies.

The Tokyo price of cement steadily rose during 1938, from ¥1.25 per bag (50 kg.) in January to ¥1.33 in December, making an average for the year ¥1.28 against ¥1.25 for the previous year.

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.

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.

Their expectation seems to have been fulfilled for the exports of cement to China in 1938 reached over five times as much as in 1937, amounting to 75,659 metric tons valued at ¥911,000 against 13,249 metric tons valued at ¥138,000 of the previous year. When compared with the normal year of 1936, the amount increased over three times in which it amounted to 22,550 metric tons.

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, "Shimizu" 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 1937 total production of chinaware amounted to ¥115,191,376, while there were as many as 6,566 factories and 62,231 employees. The value of total production including tiles and drainage pipes reached ¥145,612,876.

The following table shows how this industry has developed recently.

FACTORIES AND PRODUCTION OF CERAMICS

(Compiled by the Ministry of Commerce and Industry)

Year	Factories	Operatives	Table-ware	Furniture	Building Materials	Insulators	Toys	Others	Total
(Value in yen)									
1929	6,685	44,368	41,866,937	13,690,379	3,133,863	7,210,453	1,074,811	7,791,027	74,767,470
1930	6,435	41,228	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	9,388,284	2,304,914	4,154,691	1,103,012	5,320,929	54,197,884
1932	6,474	43,948	35,733,104	11,593,447	2,934,639	4,742,886	2,595,435	7,663,341	65,262,852
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	6,754,688	9,245,261	3,471,091	9,775,659	99,368,010
1936	6,686	63,955	58,801,046	16,845,708	7,357,239	10,865,483	3,878,602	10,423,633	108,171,711
1937	6,566	62,231	58,791,085	16,161,223	8,859,706	15,155,087	4,015,185	12,209,090	115,191,376

Factories and Production of Tiles and Drainage Pipes

(Value in yen)

Year	Factories	Operatives	Tiles			Drainage Pipes		
			Roof Tiles Value	Others Value	Total Value	Factories	Operatives	Value
1929	12,485	40,695	26,868,109	3,733,339	30,601,448	838	3,319	4,578,015
1930	11,962	38,066	19,752,659	2,887,521	22,640,180	832	3,150	4,301,342
1931	11,725	38,072	18,345,402	2,654,000	20,999,402	784	2,865	3,814,048
1932	11,445	38,268	16,070,815	2,784,285	20,855,100	827	2,966	3,092,524
1933	11,213	37,628	19,125,574	3,111,841	22,237,415	918	3,310	3,760,772
1934	11,021	38,680	20,740,445	3,192,184	23,932,629	937	3,453	4,228,313
1935	10,809	39,398	21,277,565	3,374,301	24,651,866	944	3,913	4,431,993
1936	10,688	39,576	23,076,803	3,535,245	26,612,048	891	3,593	4,964,409
1937	10,211	35,795	21,571,140	3,339,705	24,910,845	921	4,324	5,510,655

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 Seitō-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 can-

not.

(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 in 1938 declined on account of the State control of trade.

EXPORTS OF CHINAWARE TO DIFFERENT COUNTRIES

Countries	(In ¥1,000)						
	1932	1933	1934	1935	1936	1937	1938
Manchoukuo	—	531,128	1,238	1,222	1,391	2,222	3,821
China	554	991	1,387	1,359	1,127	1,145	2,453
Kwantung L. T.	756	1,193	2,084	2,162	1,659	2,353	4,643
Hong Kong	142	247	442	493	481	366	191
British India	3,463	3,965	3,204	3,529	3,696	4,240	2,580
Straits Settlements	374	900	1,290	763	514	1,174	307
Dutch East Indies	2,424	3,728	3,269	2,133	2,388	3,109	2,714
French Indo-China	36	144	134	245	270	231	131
Philippines	635	959	580	945	1,148	1,431	628
Great Britain	825	1,296	1,161	1,186	1,275	1,171	888
France	311	643	355	261	317	426	133
Germany	100	146	221	226	245	303	296
Italy	236	371	343	110	—	—	—
Holland	848	981	761	498	607	542	607
U. S. A.	6,180	10,180	14,310	15,776	15,530	19,460	8,696
Canada	1,317	1,399	1,508	1,458	2,025	2,038	1,235
Argentina	150	395	628	767	595	1,259	786
Brazil	118	370	554	672	461	1,036	576
Egypt	408	438	627	488	495	364	415
Australia	1,768	2,707	2,331	2,804	2,291	2,598	2,915
Others and Total	22,937	35,634	41,879	43,318	43,548	53,971	40,477

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 manufactur-

ing 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, Koldé Shoshi Seizosho (Koldé 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. Magotchi Shimoda, after two years of experimental 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 Yanosuke 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
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	3,487,096	137,740	251,207	3,373,629
1937	4,285,327	78,417	306,121	4,085,076
1938	3,174,972	10,076	262,217	2,922,831

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	
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	1,280	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
1937	7,023	962	1,161	260	1,014	1,089	31,325

(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	
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
1937	3,320	27,465	570	7,779	301	5,444	0.560	721	96,375

EXPORTS OF GLASS AND GLASSWARE

(Value in ¥1,000)

Kinds	1936		1937		1938	
	Quantity	Value	Quantity	Value	Quantity	Value
Window glass in 1,000 sq. ft.	25,120	1,233	27,566	1,560	23,068	1,364
Thermos in 1,000 doz.	395	2,885	410	3,131	262	2,138
Glass bottles in 1,000 doz.	27,332	5,834	36,225	8,030	29,485	7,001
Glass cups in 1,000 doz.	7,455	4,097	8,942	5,064	6,311	3,583
Glass tableware in 1,000 doz.	1,548	1,415	2,238	2,541	1,831	1,571
Watch glasses in gross	133	162	146	183	—	—
Glass beads and balls in 100 kin	20,950	1,056	26,640	1,432	21,309	1,223
Spectacles in 1,000 pcs.	27,016	2,552	30,792	3,243	18,183	1,657
Looking glasses in 1,000 pcs.	75,238	3,413	87,896	3,955	66,790	2,981
Other glasses & manufactures	—	2,981	—	6,296	—	4,368
Total	—	25,627	—	33,572	—	25,886

IMPORTS OF GLASS

(Value in ¥1,000)

Kinds	1936		1937		1938	
	Quantity	Value	Quantity	Value	Quantity	Value
Uncoloured plate glass under 2.2 mm. in 1,000 sq. m.	1,120	694	590	584	54.8	71
Uncoloured plate glass under 4 mm. in 1,000 sq. m.	23	147	18	107	7.7	52
Other uncoloured plate glass in 1,000 sq. m.	79	953	46	609	14.6	566
Other plate glass in 1,000 sq. m.	56	226	72	292	16.4	71
Plate glass having inlaid metal wire or net in 1,000 sq. m.	6	86	19	133	2.1	18
Dry plates for photography in 100 kin	6	710	4	491	2	—
Others	—	1,025	—	1,770	—	1,723
Total	—	3,845	—	3,989	—	2,501

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 Dogyo 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 1933, they suddenly increased to ¥3,248,000 from about ¥938,000 in 1932.

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 amal-

gamating the Nippon Match Manufacturing 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 tea 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 under-

selling 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 1937 and 1938 follow:

EXPORTS OF MATCHES

Destinations	(Value in yen)	
	1937	1938
China	9,000	2,053,000
Philippines	86,000	141,000
Kwantung L. T.	423,000	638,000
Total including others	2,103,000	3,304,000

Number of Factories The number of match factories in Japan was 158 with 8,520 operatives at the end of 1937.

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 (Value in yen)	
			Match-boxes	Matchwood
1929	21,607,683	9,825,495	1,358,616	1,220,148
1930	16,722,653	7,464,081	645,765	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	20,711,239	9,202,221	1,169,029	710,525
1934	20,597,615	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
1937	23,969,588	12,544,564	807,520	1,576,001

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 "Shunkeinuri" 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 "Noshiro-nuri," "Wakanuri" and "Tsugarunuri" 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 antiquity, 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 nacre 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 Kodaiki 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 Komami 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 æthetic 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 18 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, 77.53%, gummy sub-

stance, 2.62%, carbonic substance 1.94% and water 17.51%.

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 re-

lief 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 paint-

ing. 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. The main cause of the decrease in exports in 1938 was the State control of trade.

FACTORIES AND PRODUCTION OF LACQUER-WARE

	Factories Operatives		Tableware	Furnitures	Others	Total
	(In yen)					
1929	10,350	30,078	25,004,026	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
1937	11,874	35,093	18,106,008	12,106,268	13,801,216	44,013,492

VALUE OF EXPORTS OF LACQUER-WARE

(In ¥1,000)

Year	Value	Year	Value
1929	1,818	1934	2,570
1930	1,428	1935	2,513
1931	1,061	1936	2,098
1932	1,195	1937	2,395
1933	2,371	1938	1,444

Production of Miscellaneous Industries There are innumerable industries unable to give mention of each of which in the limited pages of the volume, and the totals of production of important ones are given in the following tables.

Sources used are the "Factory Statistics" published by the Statistics Section, the Secretariate for the Minister of Commerce and Industry, and the "Statistics for Commerce and Industry" published by the same office.

PRODUCTION OF TOBACCO

(Monopoly Bureau, Finance Ministry)

(Unit: 1,000 pieces)

	1935	1936	1937
Cigarettes, mouthed	11,970,555	10,987,371	10,473,230
Cigarettes, without mouthpiece	27,067,329	28,806,713	30,107,355
Cigars	2,731	1,627	1,223
Cut tobacco kilogramme	20,418,971	21,198,772	21,601,591
Pipe tobacco kilogramme	16,260	9,485	6,565