

WOOD PULP AND PULPWOODS

LETTER

FROM

THE ACTING CHAIRMAN OF THE UNITED STATES
TARIFF COMMISSION

TRANSMITTING

IN RESPONSE TO SENATE RESOLUTION No. 95, A REPORT OF
ITS INVESTIGATION OF THE EFFECT OF THE DEPRECI-
ATION IN VALUE OF FOREIGN CURRENCIES UPON
THE IMPORTATION INTO THE UNITED STATES
OF MECHANICALLY GROUND WOOD PULP;
CHEMICAL WOOD PULP, UNBLEACHED
AND BLEACHED; AND
PULPWOODS



APRIL 21, 1932.—Referred to the Committee on Finance
and ordered to be printed, with illustrations

UNITED STATES
GOVERNMENT PRINTING OFFICE
WASHINGTON : 1932

FOR SALE BY THE SUPERINTENDENT OF DOCUMENTS, WASHINGTON, D. C.

LETTER OF TRANSMITTAL

UNITED STATES TARIFF COMMISSION,
Washington, April 20, 1932.

THE PRESIDENT OF THE SENATE,
Washington, D. C.

SIR: I have the honor to transmit herewith, in compliance with Senate Resolution No. 95, dated December 16, 1931, the report of an investigation made by the United States Tariff Commission, under section 332 of Title III of the tariff act of 1930, of the effect of the depreciation in value of foreign currencies upon the importation into the United States of mechanically ground wood pulp; chemical wood pulp, unbleached or bleached; and pulpwoods.

Respectfully,

THOMAS WALKER PAGE,
Acting Chairman.

P. S.—Chairman Robert L. O'Brien did not participate in this investigation.

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WOOD PULP AND PULPWOODS

SUMMARY

WOOD PULP

The relation of depreciated currency to the wood-pulp situation is discussed in the report from two points of view, that of quantities and that of prices. In both cases it is necessary, in order to form any opinion as to the effects of depreciation, to consider the monthly movements for two or three years back and the annual movements for a number of years back. There has long been a tendency toward an increase in importations of pulp from European countries, especially Sweden and Finland, with decreasing importations from Canada. During the recent general business recession, there has been a downward trend in domestic production, especially the production of those pulp mills which are unaffiliated with paper mills, and also a downward trend in imports from Canada, whereas imports from European countries have been better maintained. The question whether there has been a strengthening of these trends since depreciation of the currency set in, in the latter part of 1931, is an intricate one.

There has also been during the last three years, as might be expected, a decided downward trend in the prices of wood pulp. Three causes seem to have contributed: The general business depression and reduced demand, the increased competition of the Pacific coast with eastern pulp mills, and the relative increase in imports from European countries (not from Canada). This downward trend in prices has perhaps been somewhat more marked since the depreciation of the currency in European pulp-producing countries than before.

The most important facts regarding quantities of pulp appear in Tables 31 and 33 (pp. 45 and 53) of the report. It is important to note that imports, especially from European countries, during a given month are largely based on contracts made at least one month, and often several months, earlier. It is also important to note that domestic production and imports are both more or less seasonal and that the seasons do not coincide; domestic production tending to be larger in the first two quarters than in the last two quarters of the year, and imports from Europe tending to be largest during the fall and winter months.

These tables show that the greatest decline in domestic pulp production, considered as a whole, was from the second to the third quarter of 1930, and that a considerable decline occurred again from the second to the third quarter of 1931 before depreciation began, and some further decline in the last quarter. The shipments of pulp mills to affiliated paper mills have been much steadier than their shipments to unaffiliated plants, which are more affected by competition, both domestic and foreign. Marked declines in the shipments to unaffiliated plants occurred in the latter part of 1930 and again from the third to the fourth quarter of 1931.

In considering how far this latter movement was due to European competition, the data both as to imports and as to contracts for imported pulp must be weighed carefully. Imports from Europe tend normally to increase in the third quarter of each year but the increase in the third quarter of 1931, before depreciation began, was much more marked than during 1929 or 1930. The increase in imports in the fourth quarter of 1931, partly due to seasonal causes, was less marked than that from the third to the fourth quarter of 1930. Much the largest contracts reported during 1931 were in the second and third quarters, and these had much to do, no doubt, with the larger importations of the fourth quarter. The contracts during the fourth quarter of 1931, although less than during the second and third quarters, were greater than in the fourth quarter of 1929 or of 1930. The largest importations from Europe shown during any recent period were in the first quarter of 1932 (mostly in January and February). The large imports of January and February may have been influenced by the anticipation of a strike in Sweden, which in fact took place in April.

With regard to prices, the most significant facts are set forth in Table 41 (p. 69); this deals only with foreign pulp but naturally the prices of similar kinds of domestic pulp must be substantially parallel. It is, of course, impossible from the mere facts of the changes in prices to determine whether they were initiated by the importers or by domestic competition, or sometimes by one and sometimes by the other.

This table shows in a general way that the average import values of pulp from Sweden, which substantially dominates in the imports of European pulp, follow, with some lag in time, the prices made in contracts for European pulp. The most important kinds of pulp imported from Europe are unbleached sulphite and unbleached sulphate. Both have tended downward for two years or more, but the movement of their prices is by no means parallel. The prices for unbleached sulphite have fallen somewhat more rapidly since depreciation set in than before, but no such relation can be traced in the prices for unbleached sulphate. There was a sharp decline in the contract prices for European unbleached sulphite from the second to the fourth quarter of 1930 and again from the second to the fourth quarter of 1931 with some accentuation of the movement in the fourth quarter, which again is reflected in the unit prices of imports from Sweden in the first quarter of 1932. On the other hand, contract prices for European unbleached sulphate were fairly steady after the fourth quarter of 1930 and showed no decline in the fourth quarter of 1931; the average import values of unbleached sulphate from Sweden have also been steady for the last three quarters covered by the table (July, 1931, to March, 1932).

The European countries have long been gaining at the expense of Canada and have continued to gain since depreciation set in. The Canadian dollar is down only 10 or 12 per cent, whereas the currencies of the European pulp-producing countries are down 25 per cent or more.

The general question whether the domestic industry should be protected, independently of the effect of currency depreciation, was of course before Congress when the tariff act of 1930 was passed. The present report shows that the United States has for many years been

largely and increasingly dependent upon foreign sources for wood-base paper, through imports either in the form of pulpwood or of wood pulp or of paper itself. Those paper mills which do not have their own affiliated domestic pulp mills have long used much more imported pulp than domestic pulp. This trend is commonly attributed to the partial exhaustion of our forests of wood especially suitable for papermaking, except on the far distant Pacific coast. The trend as regards the sources of supply of paper and paper-making materials during the last two or three years has been in line with previous trends.

The domestic pulp industry is undoubtedly suffering severely but the greatest source of its difficulties is the general business depression. The industry as a whole has lost much less in output during the depression than many other manufacturing industries and the prices have declined not much more than those of other commodities.

PULPWOOD

The problem with respect to pulpwood is much simpler than with respect to pulp. Canada has always been our principal source of imports, supplying about one and one-half million cords annually in 1929 and 1930 as compared with an average annual production in the United States of between five and six million cords. The importation is extremely seasonal, and any advantage which Canada might conceivably gain from depreciated currency would not be expected to show in the actual imports during the winter of 1931-32. The imports in the winter are always relatively small, but those in the last quarter of 1931 were very much less than in the same quarter of 1930, and there was also a marked drop in imports during the first quarter of 1932 as compared with the same period of 1931.

There is no statistical information of value with regard to the prices of pulpwood, but it is commonly stated that they have fallen greatly during the last two or three years and perhaps most of all during the present winter. The demand for domestic pulpwood is affected, of course, not merely by the imports of pulpwood but also by the imports of pulp. The increasing consumption in the Eastern States of pulp produced on the Pacific coast has been an important factor in lessening the demand for pulpwood in the Northeastern States.

WOOD PULP AND PULPWOODS

UNITED STATES TARIFF COMMISSION,
Washington, April 20, 1932.

INTRODUCTION

HISTORY OF THE INVESTIGATION

This investigation was instituted on December 18, 1931, under the provisions of section 332 of the tariff act of 1930, pursuant to Senate Resolution No. 95, Seventy-second Congress, adopted December 16, 1931. The resolution reads as follows:

Resolved, That the United States Tariff Commission is directed to make a thorough investigation of the effect of the depreciation in value of foreign currencies upon the importation into the United States of mechanically ground wood pulp, chemical wood pulp, unbleached or bleached, and pulpwoods, and to report to the Senate as soon as practicable the results of such investigation.

DATA OBTAINED IN THE INVESTIGATION

The commission examined a large body of general statistical data on production, sales, imports, exports, prices, and general development of the pulp industry in the United States and the principal foreign pulp-producing countries. Specific data on the domestic industry were obtained by questionnaire from (1) consumers of pulpwood and producers of pulp, and (2) consumers of pulp as represented principally by the so-called converting paper mills—mills which buy most or all of their pulp in the general market and not from affiliated plants or concerns. The commission sent questionnaires to 165 domestic manufacturers of pulp, the majority of whom produce paper also, and received 145 returns. To the paper mills the commission mailed 265 questionnaires and received 201 replies. Data relative to the quantities and prices of imported pulp, and the markets to which distributed, were obtained direct from the books of record of the importers by agents of the commission. The information thus obtained covered approximately 90 per cent of contracts made with domestic paper mills during 1929, 1930, and 1931 for the purchase of imported pulp.

Wood pulp is generally of two classes—that produced by (1) chemical processes, including “sulphite,” “sulphate,” and “soda” pulp and (2) mechanical methods known as ground wood. Pulp is sometimes bleached to obtain a maximum whiteness and purity.

I. GENERAL EXCHANGE AND PRICE SITUATION IN FOREIGN PULP-PRODUCING COUNTRIES

EXCHANGE RATES

At all times, past and present, the great bulk of the importation of wood pulp and pulpwoods into the United States has been from countries whose currency is depreciated. The only country from which significant imports of pulp are received and whose currency has not depreciated is Germany. The principal sources of our pulp imports from depreciated currency countries are Canada, Sweden, and Finland, and smaller quantities come from Norway. Canada is the only important source of pulpwood.

The depreciation in exchange of all four of the countries just named began in the latter part of September, or in October, 1931, and was connected with the action of the United Kingdom in suspending the gold standard. Table 1 shows the monthly average exchange rates for these countries from August, 1931, to March, 1932. Data are also given for Germany, the exchange of which during September and October was slightly below par.

The exchange of each of the four countries under consideration dropped rather sharply in the latter part of September or during October. In each country it was still lower in December. The exchange of Canada, Sweden, and Norway rose slightly in January, but that of Finland fell still lower. Since January the exchange has risen in all four of these countries.

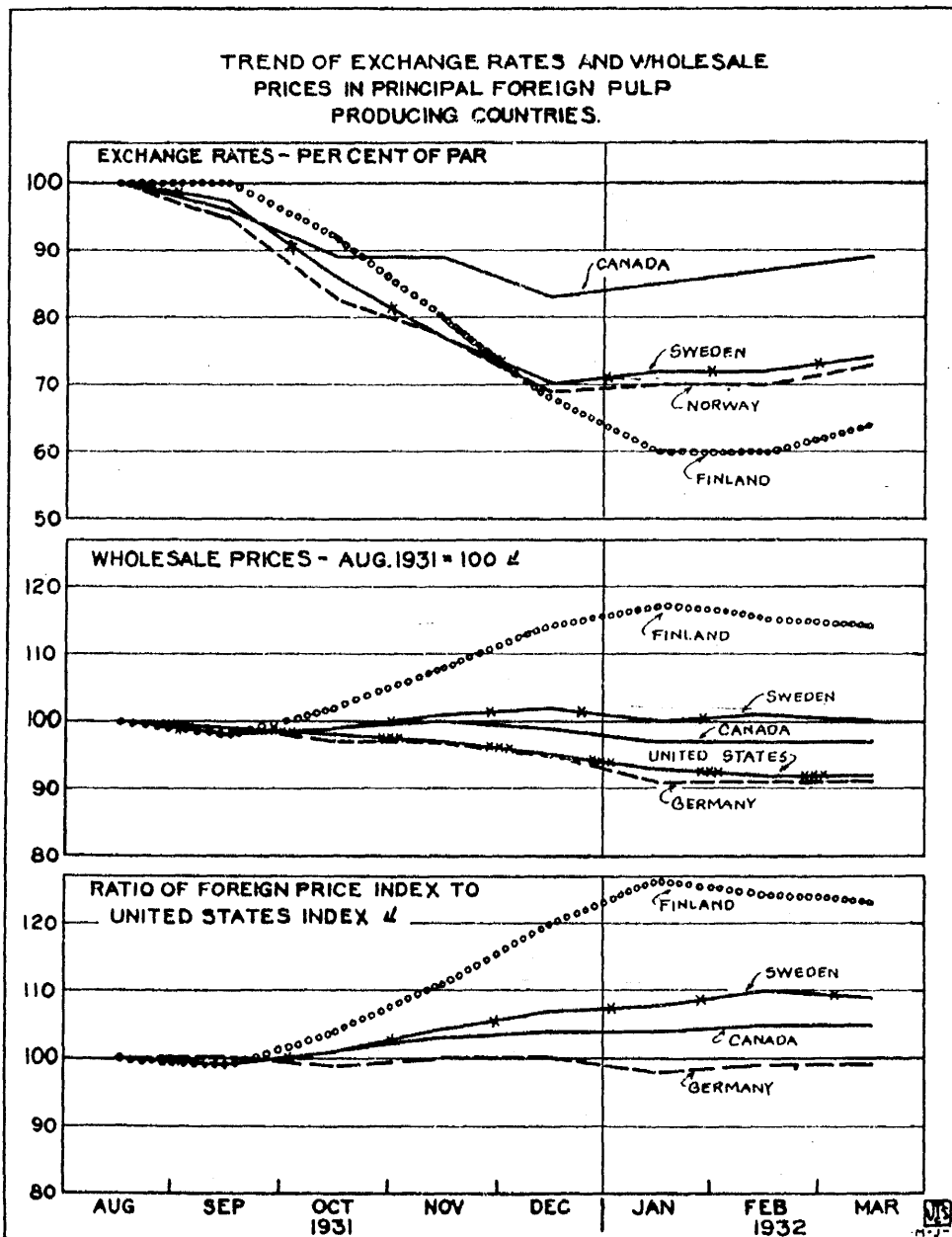
TABLE 1.—Trend of exchange rates and wholesale prices in principal foreign pulp-producing countries

Country	August, 1931	September, 1931	October, 1931	November, 1931	December, 1931	January, 1932	February, 1932	March, 1932
Exchange rates—relatives ¹								
Canada.....	100	96	89	89	83	85	87	89
Sweden.....	100	97	86	77	70	72	72	74
Norway.....	100	95	83	77	69	70	70	73
Finland.....	100	100	92	80	68	60	60	64
Germany.....	100	99	98	100	100	100	100	100
Wholesale price indexes ¹								
United States.....	100	99	98	97	95	93	92	92
Canada.....	100	98	99	100	99	97	97	97
Sweden.....	100	98	99	101	102	100	101	100
Norway.....	100	98	99	99	102	102	102	102
Finland.....	100	98	102	108	114	117	115	114
Germany.....	100	99	97	97	95	91	91	91
Ratio of foreign wholesale price index to United States index								
Canada.....	100	99	101	103	104	104	105	105
Sweden.....	100	99	101	104	107	108	110	109
Norway.....	100	99	101	102	107	110	111	111
Finland.....	100	99	104	111	120	126	125	124
Germany.....	100	100	99	100	100	98	99	99

¹ On basis of August, 1931, exchange rates and prices as 100.

In each month beginning with November the exchange rates of Sweden, Norway, and Finland have been considerably lower than that of Canada, and beginning with January the rate for Finland

CHART A



has been considerably lower than the rates for Sweden and Norway. These differences should be borne in mind in comparing the imports of wood pulp from the several countries during recent months.

PRICES IN FOREIGN PULP-PRODUCING COUNTRIES

The effect of exchange depreciation in foreign countries upon their competition in the markets of the United States can of course be judged correctly only on the basis of facts concerning actual imports in comparison with domestic production and concerning actual prices of imported as compared with domestic commodities. It should be pointed out, however, that whatever advantage in competition the foreign country may gain must depend not merely on the exchange rate but on the relation between that rate and costs of production in terms of the country's own currency. If the costs of production should rise as rapidly as the exchange rate fell, there would be no advantage in competition. The commission has not undertaken to ascertain the actual costs of production of wood pulp in foreign countries during the period since depreciation set in, nor has it obtained evidence as to changes in rates of wages or other elements in costs in those countries during that period. But some light on tendencies as regards costs of production may be drawn from wholesale price indexes. When depreciation occurs in a given country, the prices of products which that country imports from gold standard countries tend to rise in terms of its currency, and this in turn exercises some influence on prices of domestic commodities and on the cost of living.

The discontinuance of the gold standard was followed by an increase of prices in Sweden, Norway, and Finland. This was to be expected because of the relatively important part that import trade plays in the economy of these countries and because of the importance of their foreign trade with countries maintaining a gold standard.

Sweden's foreign trade amounted to 3,500,000,000 kronor in 1929 and to 3,200,000,000 kronor in 1930.¹ In 1929 Sweden's total industrial production was valued at 5,100,000,000 kronor and the value of her principal crops was 1,000,000,000 kronor.¹ Sweden's foreign trade in 1929, therefore, amounted to over half as much as the value of her industrial and crop production. More than half of Sweden's imports come from Belgium, France, Italy, the Netherlands, Germany, and the United States—countries on a gold standard in 1932.

The industrial production of Norway in 1928 was valued at less than her total foreign trade,² while about half of her imports come from gold-standard countries.³

Finland's foreign trade equals her industrial production, both being 13,000,000,000 markkaa in 1929.⁴ Four-sevenths of Finland's imports in 1929 were from countries having a gold standard at the writing of this report (April, 1932).

It should be noted further, that in comparing the general upward movement of the wholesale price indexes of the foreign countries having depreciated currency, regard should be given also to the general downward movement of prices in other countries, including the United States.

¹ Sweden, *Statistisk Arbok*, 1931, pp. 85, 119, 134.

² Norway Year Book, 1931, pp. 319, 344.

³ Norway Year Book, 1931, p. 327.

⁴ Finland, *Tilastollinen Vuosikirja*, 1930, pp. 105, 116.

Table 1 shows the general wholesale price indexes of the principal foreign pulp-producing countries in comparison with that of the United States. The comparison is also shown by chart A. Between August, 1931, and March, 1932, the wholesale price index of the United States declined 8 per cent. That of Canada, although the exchange was depreciated, also fell somewhat. The wholesale price indexes of Norway and Sweden rose slightly and that of Finland rose materially, being 14 per cent higher in March than in August.

TREND OF TOTAL TRADE OF THE UNITED STATES WITH FOREIGN PULP-PRODUCING COUNTRIES

Table 2 shows in terms of value the total imports of all commodities from the five foreign countries from which the United States receives pulp and the total exports to those countries, in comparison with imports from all European countries and from the entire world. Data are given for each month from October, 1931, to February, 1932, inclusive, and for this period as a whole. The relatives presented show the ratio of the figure for each month or period to the corresponding figure one year earlier.

In considering the relation of this table to the trade of wood pulp it should be borne in mind that in the case of Sweden and Finland wood pulp represents a very considerable part of the imports from those countries into the United States but that in the case of Canada, Norway, and Germany it is a relatively small factor in the total. For the calendar year 1931, wood pulp represented 70.5 per cent in value of our total imports from Sweden and 67.8 per cent for Finland, but on the other hand, only 8.7 per cent for Canada, 2.9 per cent for Germany, and 9.9 per cent for Norway.

The table shows that for the period October, 1931, to February, 1932, inclusive, the total value of imports from Finland was 22 per cent greater than for the corresponding period of 1930-31, notwithstanding the fact that prices of major imports from Finland, expressed in terms of dollars, had declined. In the case of Canada, Sweden, and Norway, also depreciated currency countries, on the other hand, the imports during the 1931-32 period were considerably less than during the same months one year earlier, and the same was true of Germany. The value of exports to all five of these countries has fallen sharply.

In considering this table it should be borne in mind that both the imports from these countries and the exports to them had been declining before exchange depreciation set in; and also that both the imports from and the exports to most other countries of the world have been less during recent months than during the same months one year ago and had been declining more or less continuously since 1929.

TABLE 2.—Total value of trade of the United States with important pulp-producing countries, by months

[In thousands]

	Depreciated-currency countries supplying imports of wood pulp				Germany	All European countries	All countries of world
	Canada	Sweden	Norway	Finland			
IMPORTS							
Total value of all commodities:							
October, 1931.....	\$21,281	\$2,435	\$835	\$774	\$12,071	\$56,302	\$168,707
November, 1931.....	20,465	3,838	975	1,350	8,274	49,306	149,719
December, 1931.....	20,037	2,488	804	666	8,187	50,231	152,940
January, 1932.....	16,551	5,407	996	767	6,446	40,985	130,000
February, 1932.....	14,615	4,227	1,048	728	8,639	41,720	130,977
Average, October, 1931-February, 1932.....	18,583	3,679	931	857	8,710	47,709	147,509
Ratio to corresponding month of preceding year (per cent):							
October, 1931.....	62	78	70	108	70	73	68
November, 1931.....	68	90	98	147	74	75	74
December, 1931.....	77	61	75	74	70	89	73
January, 1932.....	70	100	64	107	60	77	74
February, 1932.....	68	141	138	173	91	82	75
Average, October, 1931-February, 1932.....	69	94	89	122	73	79	72
EXPORTS							
Total value of all commodities:							
October, 1931.....	\$27,279	\$3,327	\$1,160	\$574	\$17,362	\$111,983	\$204,904
November, 1931.....	25,760	2,735	1,224	274	15,694	100,820	193,554
December, 1931.....	19,777	1,595	931	339	14,587	92,241	183,578
January, 1932.....	18,575	1,495	571	99	12,058	71,093	150,000
February, 1932.....	20,213	1,238	357	122	11,004	74,038	153,921
Average, October, 1931-February, 1932.....	22,321	2,079	629	282	14,139	90,036	177,191
Ratio to corresponding month of preceding year (per cent):							
October, 1931.....	56	68	63	32	55	64	63
November, 1931.....	62	80	84	53	60	65	67
December, 1931.....	55	48	73	65	72	65	67
January, 1932.....	55	45	47	22	71	54	60
February, 1932.....	57	51	33	41	65	63	69
Average, October, 1931-February, 1932.....	57	58	60	43	66	62	65

Source: Monthly Summary of Foreign Commerce of the United States.

II. WOOD PULP—HISTORY OF THE INDUSTRY AND GENERAL STATISTICS

INTRODUCTION

PRIMARY SOURCES OF WOOD-BASE PAPER CONSUMED IN THE UNITED STATES

The great bulk of the paper produced in the United States is made from wood pulp. This country has for many years been in considerable and growing measure dependent on foreign countries either for paper-making materials or for paper. It has imported large and increasing quantities of each of the three classes of products: (a) pulpwood, (b) wood pulp, and (c) paper made from wood pulp, especially newsprint. This increasing dependence on foreign sources is ordinarily attributed, at least in part, to the gradual cutting off of our forests, especially in the Northeastern and Lake States.

Compilations made by the Forest Service of the Department of Agriculture indicate that at the beginning of the present century about 78 per cent of the paper of wood origin used in the United

States, or exported from it, was made from pulpwood produced in this country itself. By 1914 the proportion had fallen to about 60 per cent and by 1922 to about 48 per cent. The proportion has since been reduced still further and in 1928, the latest figure available, it was about 44 per cent. That is to say, considerably more than half of the wood-base paper used in or exported from the United States was either imported as paper or made in this country from imported pulpwood or imported pulp.

Canada is almost the only country from which pulpwood is imported and is by far the principal country from which wood-base paper is imported. There was also, until 1930, more wood pulp imported from Canada than from any other country, but the dominance of Canada in this respect was less marked in 1930, and in 1931 Sweden became the largest source of imports of pulp.

In 1928, the latest year for which the data have been compiled, it is estimated that the total requirements of wood-base paper in the United States for domestic consumption and export were equal to the product of 13,212,000 cords of pulpwood (only 273,000 cords representing export), of which United States forests supplied about 5,751,000 cords, Canadian forests about 5,352,000 cords, and the forests of all other countries (principally Sweden, Finland, and Norway) about 2,109,000 cords.

TOTAL PRODUCTION OF PAPER

Besides wood pulp, pulp made from rags, jute, hemp, straw, and waste paper is used in paper production. In the United States about 2,000,000 tons of paper are produced annually from waste paper. Paper board, which represents about 40 per cent of paper-mill production, is largely made from waste paper and straw, with which is mixed a small quantity of wood pulp.

The total production of paper from wood and other materials in the United States has increased markedly over long periods of time, partly as the result of increasing importation of paper-making materials. The combined production of paper and paper boards, as reported by the Bureau of the Census, was 4,216,708 short tons in 1909, it rose to 5,431,000 tons in 1921, and to 11,091,000 tons in 1929. Since then the output has declined, being estimated at 10,169,000 tons in 1930 and at 9,162,000 tons in 1931.

RELATION OF DOMESTIC PRODUCTION, IMPORTS, AND EXPORTS

SUMMARY FOR ALL KINDS OF PULP COMBINED

Table 3 shows for specified years 1909 to 1931 the apparent consumption of wood pulp (sum of domestic production and imports minus exports) together with the domestic production, exports and imports. The consumption, which had increased in approximate parallel with the total production of paper, reached a maximum of 6,695,000 short tons in 1929 but fell to about 5,534,000 tons in 1931. The decrease in consumption (estimated for 1931) from 1929 to 1931 was about 17 per cent, and the decrease in domestic production was between 17 and 18 per cent; the decrease in imports was 15.8 per cent. The share of domestic consumption supplied by imports remained practically unchanged from 1926 to 1931.

WOOD PULP AND PULPWOODS

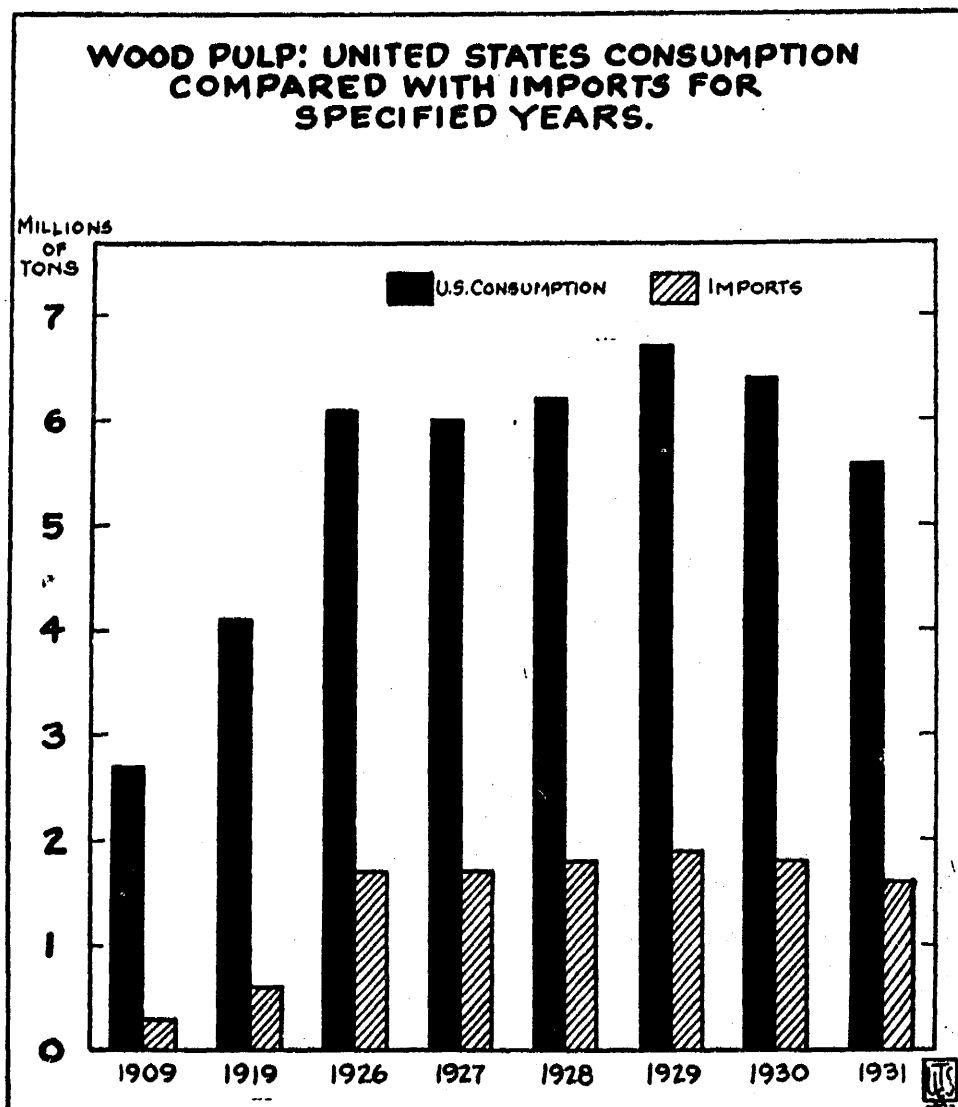
TABLE 3.—Wood pulp: Domestic consumption in specified years

[In tons of 2,000 pounds]

Year	Apparent consumption	Production	Exports	Imports	Proportion of domestic consumption supplied by imports
1909 ¹	2,791,082	2,496,623	11,564	307,123	Per cent 11.0
1919	4,113,911	3,517,952	40,057	630,916	15.5
1926	6,094,181	4,394,766	34,220	1,733,635	28.4
1927	5,901,334	4,313,403	31,984	1,079,915	28.2
1928	6,239,974	4,510,800	32,364	1,761,538	28.2
1929	6,095,163	4,862,885	54,068	1,886,346	28.2
1930	6,414,243	4,630,308	48,427	1,832,362	28.6
1931 ²	5,634,249	4,100,000	53,308	1,687,557	³ 28.2

¹ Fiscal year ending June 30, 1909.² Estimated as to consumption and production.³ Approximate.

CHART B



PRODUCTION AND IMPORTS, BY CLASSES

The cheapest form of wood pulp is that mechanically ground, without use of chemical processes. This is not ordinarily subjected to bleaching process, but relatively small quantities are bleached. Ground wood represents normally about one-third of the consumption in the United States, the other two-thirds being pulp made by chemical processes. Of the several kinds of chemical pulp, the most important is sulphite, followed by sulphate and soda. About two-fifths of the sulphite pulp consumed is bleached, but the bulk of the consumption of sulphate and soda pulp is unbleached.

CHART C

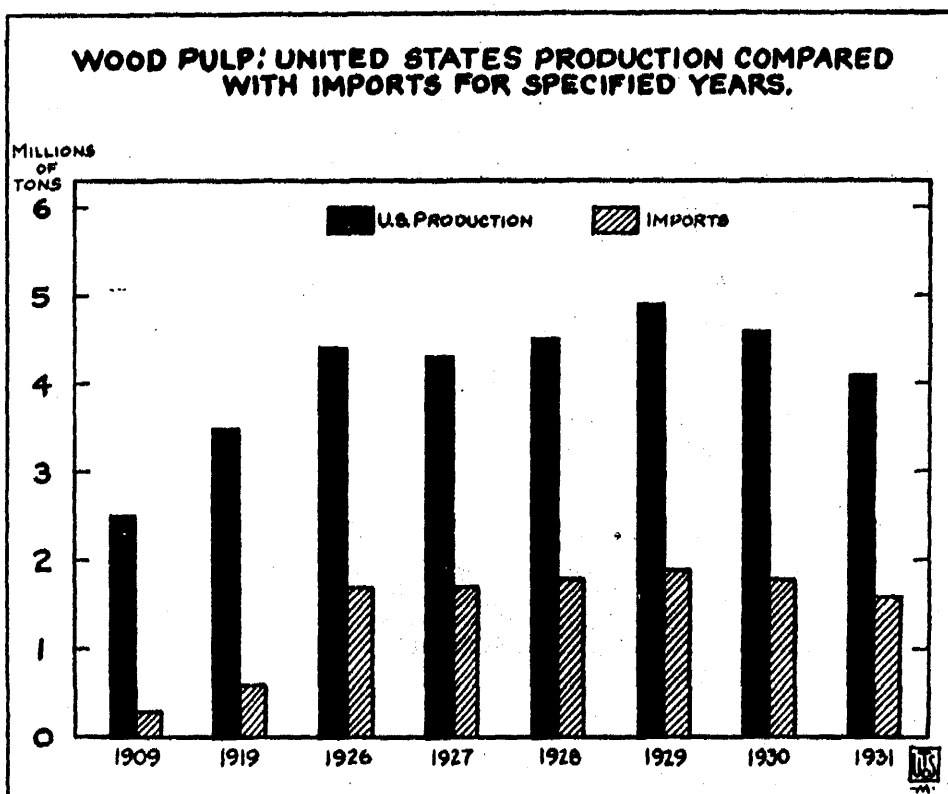


Table 4 shows for selected years the domestic production and imports of each of the principal kinds of wood pulp and the proportion which the domestic and imported product, respectively, forms of the combined total (this total does not precisely represent consumption in the United States because there are some small exports). The more detailed data of production and imports are shown in Tables 5 and 6. The figures of production for 1931 are approximate only, being estimated from the data of the plants canvassed by the Tariff Commission in the present investigation.

CHART D

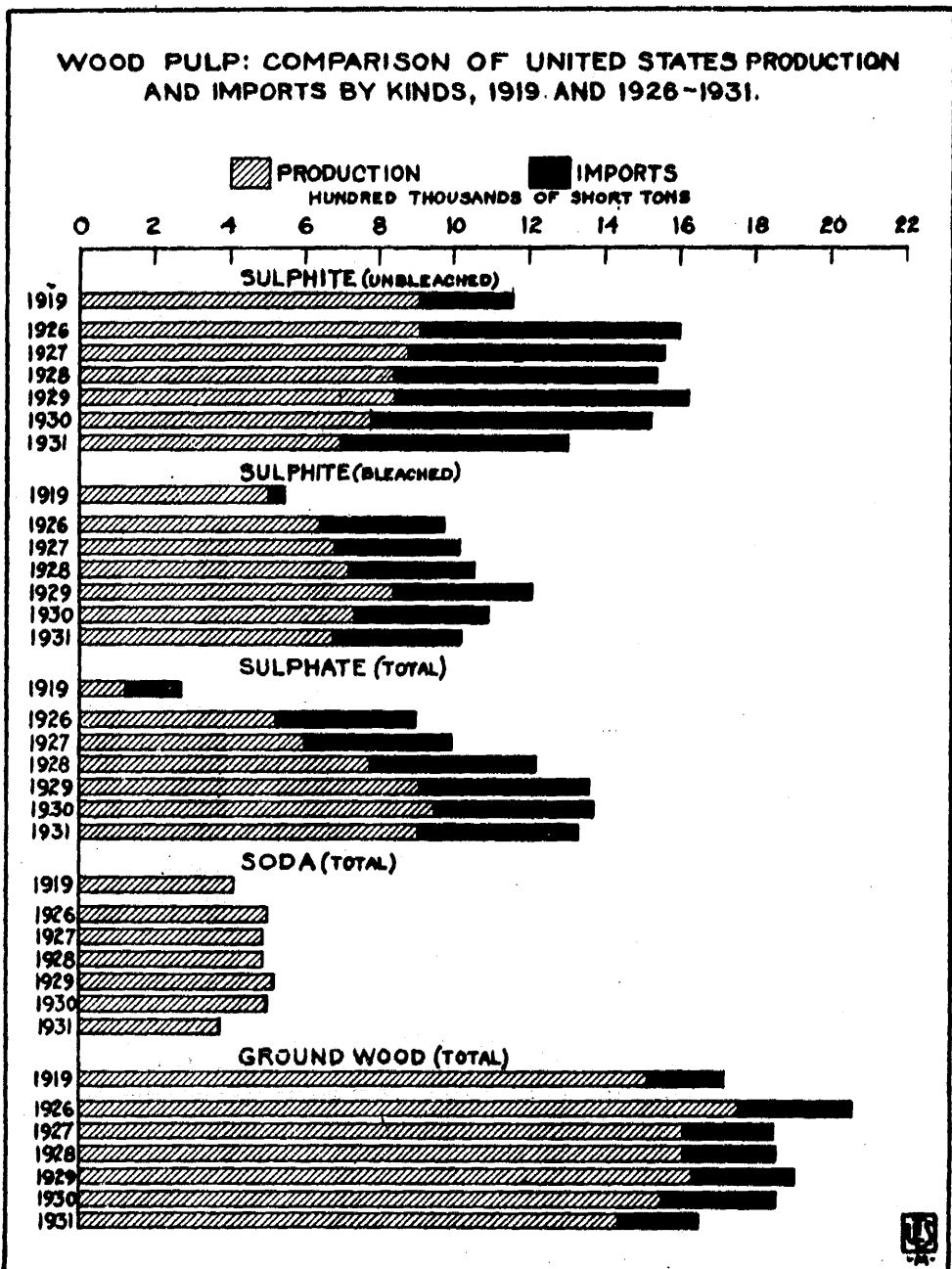


CHART E

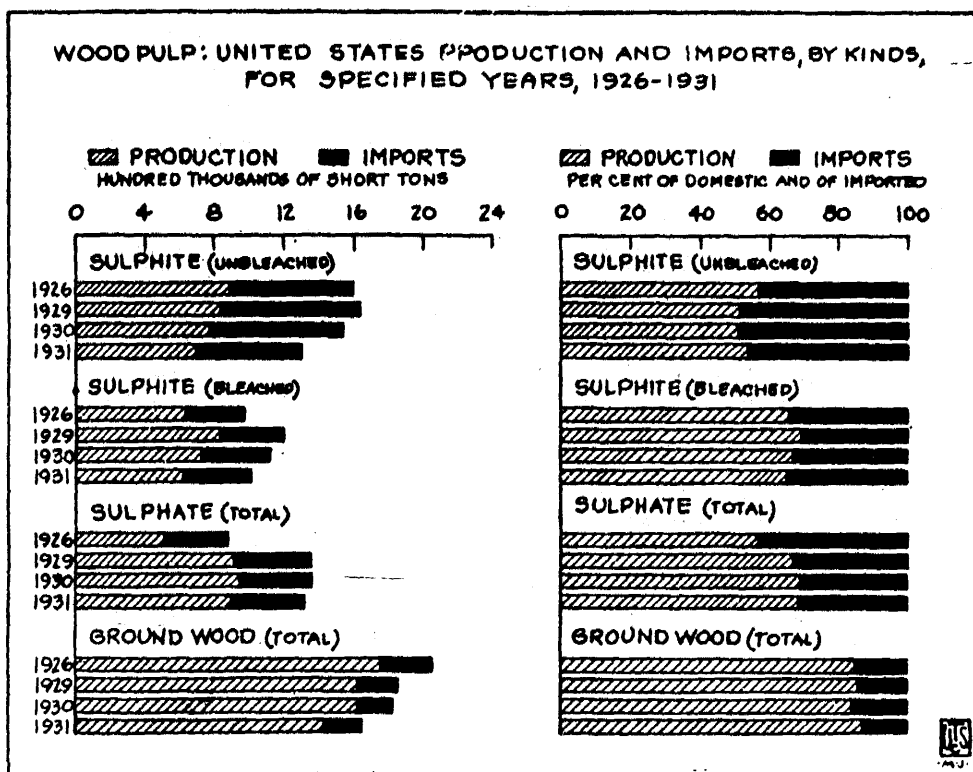


TABLE 4.—Wood pulp: United States production and imports, by kinds, in specified years

[Source: U. S. Department of Commerce, 1919 and 1931—Foreign Commerce and Navigation of the United States, 1926-1930—Bureau of the Census.]

[Quantity in tons of 2,000 pounds]

Year	Sulphite, unbleached		Sulphite, bleached		Sulphate, total		Soda, total		Ground wood, total	
	Production	Imports	Production	Imports	Production	Imports	Production	Imports	Production	Imports
1919.....	910,091	239,952	509,738	42,755	120,378	151,057	411,693	(1)	1,518,829	202,233
1926.....	911,729	704,394	646,446	330,196	519,960	393,064	496,920	2,222	1,764,248	303,759
1927.....	872,411	657,519	680,238	348,466	603,253	394,134	487,478	2,830	1,610,409	246,915
1928.....	836,761	717,539	722,107	344,704	774,225	443,348	488,641	6,646	1,610,988	249,128
1929.....	841,658	785,631	839,953	374,343	918,084	447,294	520,729	5,617	1,637,653	273,461
1930.....	783,129	744,855	751,166	361,632	952,282	422,333	504,229	4,309	1,560,221	299,232
1931 ²	700,000	600,331	675,000	354,044	910,000	419,102	375,000	3,422	1,440,000	210,657
Percentage which production and imports respectively formed of combined production and imports										
1919.....	79.1	20.9	92.3	7.7	44.3	55.7			88.2	11.7
1926.....	56.4	43.6	66.2	33.8	56.9	43.1	99.6	.4	85.3	14.8
1927.....	58.9	44.1	66.1	33.9	60.5	39.5	99.4	.6	86.8	13.2
1928.....	53.8	46.2	67.7	32.3	63.6	36.4	98.7	1.3	86.6	13.4
1929.....	51.7	48.3	69.2	30.8	67.2	32.8	98.9	1.1	85.7	14.3
1930.....	51.2	48.8	67.5	32.5	69.3	30.7	99.2	.8	83.9	16.1
1931 ²	54	46	66	35	69	32	99	.9	87	13

¹ Not shown separately.

² Approximate; production for 1931 estimated.

Table 4 shows that during recent years ground wood pulp and sulphite pulp have been approximately equal items in domestic production, so far as quantity is concerned, but that ground wood is much less important than sulphite in imports. In both production and imports the bleached product is important in the case of sulphite but not in the case of the other kinds. In 1931 imports represented about 46 per cent of the combined total for production and imports of unbleached sulphite, 34½ per cent of bleached sulphite, and 31½ per cent of sulphate (unbleached and bleached together). For ground wood pulp the proportion of imports was very much smaller, about 13 per cent, and for soda pulp imports were insignificant.

There has been a decrease in the production of every important kind of wood pulp since 1929. A reduction appears also in the imports of each of the principal kinds, the decline being most marked in unbleached sulphite and being relatively slight in bleached sulphite. Comparing 1929 with 1926, there was a downward trend in the domestic production of unbleached sulphite and of ground wood but a marked increase in the production of bleached sulphite and still more of sulphate. The imports of all the principal kinds, except ground wood, increased considerably during this period, but there was no conspicuous change in the ratio of production and imports of any of the classes except a considerable decline in the ratio of imports of sulphate.

TABLE 5.—Wood pulp: Domestic production, by kinds, in specified years

[Tons of 2,000 pounds. The data for 1931 are estimated]

Year	Sulphite			Sulphate			Soda, unbleached and bleached	Total, chemical pulp
	Unbleached	Bleached	Total	Unbleached	Bleached	Total		
1909.....			1,017,631				208,626	1,316,257
1919.....			1,419,829			120,378	411,693	1,840,207
1926.....	911,729	646,446	1,558,175			519,960	496,920	2,575,055
1927.....	872,411	680,288	1,552,699			603,253	487,478	2,643,430
1928.....	836,751	722,107	1,558,858	733,674	40,551	774,225	483,641	2,821,724
1929.....	841,558	839,953	1,681,511	(1)	(1)	918,064	520,729	3,120,824
1930.....	783,129	751,166	1,534,295	882,794	69,488	952,282	504,229	2,990,806
1931 ²	700,000	675,000	1,375,000	850,000	60,000	910,000	375,000	2,660,000
	Semi-chemical	Mechanically ground wood			Screenings			Total, all pulp
		Not steamed	Steamed	Total	Mechanical	Chemical	Total	
1909.....				1,179,266				2,495,523
1919.....				1,518,829				3,517,952
1926.....		1,677,326	86,922	1,764,248	9,944	45,519	55,463	4,394,766
1927.....	11,983	1,435,321	175,068	1,610,409	8,229	39,352	47,581	4,313,403
1928.....	29,967	1,546,240	64,748	1,610,988	4,701	43,420	48,121	4,510,800
1929.....	40,481	1,474,415	163,238	1,637,653	11,459	52,968	64,427	4,862,685
1930.....	30,213	1,414,820	145,401	1,560,221	6,611	42,457	49,068	4,630,308
1931 ³	(4)	1,315,000	125,000	1,440,000	(5)	(6)	(7)	4,100,000

¹ Not shown separately to avoid disclosing operations of individual mills.

² Production for 1931 estimated on basis of reports made to Tariff Commission.

³ Includes screenings: Mechanical, 12,220 tons, and chemical, not shown by processes 35,003 tons.

⁴ Includes data for a small quantity of pulp not covered by items specified.

⁵ Exclusive of data for small quantities of rayon and old magazine pulp.

⁶ Not estimated.

Source: U. S. Department of Commerce, Bureau of the Census, except for 1931.

TABLE 6.—Wood pulp: Imports, by kinds, in specified years

[Source: U. S. Department of Commerce, Foreign Commerce and Navigation of the United States]

[Quantities in tons of 2,000 pounds]

Year	Sulphite		Sulphate		Soda, unbleached and bleached	Total chemical pulp, unbleached and bleached	Ground wood		Aggregate chemical pulp and ground wood
	Unbleached	Bleached	Unbleached	Bleached			Unbleached	Bleached	
	Quantity	Quantity	Quantity	Quantity	Quantity	Quantity	Quantity	Quantity	Quantity
1909 ¹						176,983	² 130,140		307,123
1919	239,952	42,755	145,911	5,145		433,763	² 202,253		636,016
1926	704,394	330,196	374,979	18,085	2,222	1,429,876	² 292,003	11,156	1,733,635
1927	687,519	348,466	322,101	12,064	2,830	1,433,000	² 240,569	6,346	1,679,915
1928	717,539	344,877	427,007	16,341	6,646	1,512,410	² 240,196	8,932	1,761,538
1929	785,631	374,343	430,086	17,208	5,617	1,612,885	² 258,018	15,444	1,886,347
1930	744,855	361,632	400,457	21,877	4,309	1,533,180	² 281,434	17,796	1,832,362
1931 ⁴	600,331	354,044	385,857	33,245	3,422	1,376,899	197,351	13,307	1,587,557
	Value	Value	Value	Value	Value	Value	Value	Value	Value
1909 ¹						\$6,571,386	\$2,057,877		\$8,629,263
1919	\$17,979,170	\$4,472,593	\$9,084,537	\$394,765		\$1,931,065	5,117,316		\$7,048,381
1926	37,032,470	23,677,926	21,193,459	1,048,662	\$114,892	83,067,412	7,863,677	\$414,543	91,345,632
1927	34,262,845	24,224,626	20,684,298	708,712	141,863	80,022,844	5,816,468	202,934	86,041,746
1928	32,587,134	23,368,424	21,170,948	894,587	373,493	78,394,586	5,229,198	214,297	83,836,081
1929	35,328,962	25,338,603	20,518,676	1,139,820	374,011	82,700,092	5,938,328	307,448	88,945,968
1930	33,193,598	22,721,929	16,452,381	1,468,599	259,745	74,066,252	6,730,713	415,577	81,242,542
1931 ⁴	22,847,787	18,710,158	12,032,798	2,267,090	165,581	56,023,414	4,211,240	286,782	60,521,436

¹ Fiscal year ending June 30, 1909.

² Not shown separately for unbleached and bleached.

³ Segregation of bleached and unbleached made on basis of imports for consumption.

⁴ Preliminary.

PRODUCTION FOR SELF-CONSUMPTION AND FOR SALE

It is customary in the pulp and paper industry to distinguish between concerns which both manufacture pulp and convert it into paper, designated as "integrated" or "self-contained" concerns, and concerns which conduct only one of these two stages of production.

A paper mill which buys wood pulp is ordinarily designated as a "converting" mill. By some of the self-contained concerns pulp and paper manufacturing is carried on at the same location; by others the pulp is produced in one plant and the paper in another, perhaps at a long distance. There are some concerns which have pulp mills in Canada and paper mills in the United States, but no similar arrangements are known to exist as between the United States and European pulp-producing countries.

The distinction between integrated concerns and other concerns is of course not a rigid one. A pulp mill which is affiliated with a paper mill may sell part of its production to other concerns, and the paper mill may buy part of the pulp it uses from other concerns. The nature of the transactions is affected considerably by the distinction between the different kinds of pulp.

Table 7, compiled from the biennial census returns, shows wood pulp production in the United States, distinguishing that produced for self-consumption by the same concern and that produced for sale

TABLE 7.—Wood pulp: United States production for consumption¹ and for sale in specified years

[Source: U. S. Department of Commerce, Bureau of the Census]

Year	Sulphite production			Sulphate production		
	For consumption	For sale	Per cent for sale	For consumption	For sale	Per cent for sale
	<i>Short tons</i>	<i>Short tons</i>		<i>Short tons</i>	<i>Short tons</i>	
1925.....	1, 138, 002	265, 084	18. 9	341, 303	68, 465	16. 7
1927.....	1, 224, 599	328, 100	21. 1	534, 824	68, 429	11. 3
1929.....	1, 228, 479	453, 032	26. 9	801, 881	116, 203	12. 7
	Soda production			Ground wood production		
1925.....	332, 360	140, 287	29. 7	1, 554, 102	57, 917	3. 5
1927.....	368, 987	118, 491	24. 3	1, 575, 519	34, 890	2. 2
1929.....	397, 731	122, 998	23. 6	1, 605, 149	32, 504	2. 0
	Screenings production			Total production		
1925.....	48, 900	15, 797	24. 4	3, 414, 667	547, 550	13. 8
1927.....	36, 920	10, 661	22. 4	3, 740, 849	560, 571	13. 0
1929.....	48, 234	16, 193	25. 1	4, 081, 474	740, 930	15. 4

¹ Wood pulp made and consumed in the same plant or transferred to and consumed in other plants operated by the same companies.

Of the approximately 4,800,000 tons of pulp manufactured in 1929 nearly 4,100,000 tons were consumed in the same plant or transferred to other plants operated by the same concern. Approximately 740,000 tons, or about 15 per cent, were produced for sale to other manufacturers of paper. The proportion produced for sale was somewhat higher in 1929 than in 1925 or 1927, a change connected with the growth of the wood-pulp industry on the Pacific coast, since the Pacific coast mills sell a large part of their output. Census figures for 1931 are not yet available.

The domestic "converting" paper mills have for a good many years past imported more of the pulp they used than they have purchased in the United States. As already stated, some of the pulp they import is from pulp mills which they themselves control in Canada. In 1929 paper mills in the United States purchased, roughly, 740,000 tons of domestic pulp from pulp mills not affiliated with themselves and the great bulk of the 1,886,000 tons of pulp which came from foreign countries during that year; they thus drew about 70 per cent of their supplies from foreign sources.

For each separate kind of pulp the quantity produced for sale is much less than the quantity produced for self-consumption by the same or affiliated plants. The proportion is especially small for ground wood, where in 1929 only 2 per cent of the output was made for sale to other concerns.

Between 1925 and 1929 the proportion produced for sale increased materially for sulphite pulp, the quantity rising from 265,000 tons, or 18.9 per cent of the total output, to 453,000 tons, or 26.9 per cent. During the same period there was a decrease in the proportion of sulphate pulp produced for sale, but the absolute amount produced for sale was much larger in 1929 than in 1925. For soda pulp and ground wood pulp there was a decrease in the absolute amount produced for sale as well as a decrease in proportion.

RATIO OF PRODUCTION TO CAPACITY

An analysis of census statistics of pulp mill capacity for alternate years 1919-1929 shows a considerable variation in the ratio of production to capacity at different periods. The ratio also varies according to the kind of pulp. The lowest ratio of actual production to capacity for the years shown was in 1921, when it was only 61.4 per cent; the highest utilization of plant was in 1929 when the output represented 80.6 per cent of capacity. Census figures for 1931 are not yet available. On the basis of the returns to the commission's questionnaire recently sent to pulp mills, the capacity of reporting mills was 0.7 per cent higher in 1930 than in 1929. A further increase of 0.7 per cent seems to have taken place in 1931.

Details of the relationship of production to capacity are shown in Table 8.

TABLE 8.—Wood pulp: Capacity of equipment and ratio of production¹ to capacity

[Source: U. S. Department of Commerce, Bureau of the Census]

Year	Sulphite		Sulphate		Soda		Ground wood		Total	
	Capacity	Ratio of production to capacity	Capacity	Ratio of production to capacity	Capacity	Ratio of production to capacity	Capacity	Ratio of production to capacity	Capacity	Ratio of production to capacity
	Short tons	Per cent	Short tons	Per cent	Short tons	Per cent	Short tons	Per cent	Short tons	Per cent
1919.....	1,656,066	85.7	252,995	47.6	464,482	83.6	1,975,039	76.9	4,348,582	79.8
1921.....	1,732,464	65.9	262,821	52.5	302,913	59.8	2,128,842	59.2	4,627,040	61.4
1923.....	1,778,429	79.4	415,628	75.2	519,267	85.7	2,244,651	69.8	4,957,975	75.4
1925.....	1,718,955	81.6	497,647	82.3	556,662	84.9	2,108,599	76.5	4,881,818	79.8
1927.....	1,845,510	84.1	696,490	86.6	627,870	77.6	2,433,110	66.2	5,602,960	75.9
1929.....	1,970,670	85.8	943,020	97.4	631,470	82.5	2,355,070	69.5	5,900,230	80.6

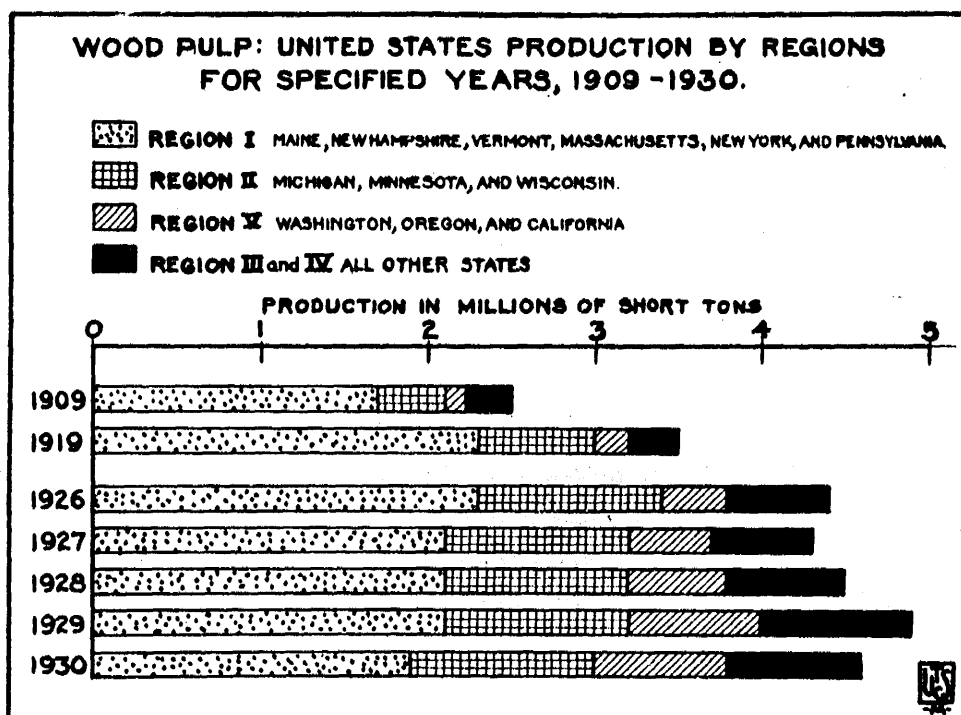
¹ Excluding semichemical and screenings.

DOMESTIC PRODUCTION, BY REGIONS

The production of wood pulp in the United States is rather widely distributed. In general, however, pulp is manufactured in or close to the areas where the pulpwood is produced. There are some pulp mills which utilize in whole or in part pulpwood imported from Canada; these are for the most part located rather close to the Canadian border.

Five regions of pulp production may be distinguished: (I) The Northeastern, (II) the Lake States, (III) Ohio and West Virginia, (IV) the Southern States, and (V) the Pacific coast. In most tables in this report it is necessary to combine the data for Regions III and IV in order to avoid disclosure of the operations of individual con-

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cerns. Table 9 shows the output by regions for selected years, also data for the leading individual States, Regions III and IV being combined.

—This table brings out the fact that there has been a gradual shift of the industry toward the West and the South. The Northeastern region has still the largest output, reporting over 40 per cent of the total tonnage in 1930, but the production in that region in 1930 was only about 10 per cent larger than in 1909, whereas the total production for the country had increased over 80 per cent. There was some decline in the absolute output of this region between 1926 and 1929, and a more marked decline took place in 1930. There was a rapid gain in output in Michigan, Minnesota, and Wisconsin down to about 1926, since which time little change has occurred. A still more rapid increase appeared between 1909 and 1926 in the output of the Pacific

Coast States and this increase has continued, the production of that region in 1930 being more than twice as great as in 1926; some increase appeared even as compared with 1929. There has also been a considerable recent increase in the production in Regions III and IV which represent chiefly the South.

TABLE 9.—Wood pulp: Quantity and value of production, by States and groups of States

[Source: 1909 and 1919, U. S. Department of Agriculture, Statistical Bulletin No. 21; 1926-1930, U. S. Department of Commerce, Bureau of the Census]

(Quantity in tons of 2,000 pounds)

	1909	1919	1926	1927	1928	1929	1930
QUANTITY							
I. Northeastern region:							
Maine.....	603, 352	916, 764	945, 790	942, 162	970, 690	961, 433	905, 068
New Hampshire.....	212, 699	232, 134	248, 600	200, 324	198, 587	212, 774	138, 332
Vermont.....	59, 356	85, 945	46, 378	32, 562	19, 831	26, 307	25, 047
Massachusetts.....	25, 804	32, 611	34, 903	31, 822	32, 370	29, 492	29, 378
New York.....	686, 323	811, 958	822, 131	710, 227	633, 182	662, 988	596, 219
Pennsylvania.....	135, 525	215, 696	233, 258	216, 587	215, 598	213, 083	188, 943
Total.....	1, 723, 459	2, 206, 098	2, 331, 058	2, 133, 684	2, 073, 258	2, 126, 077	1, 883, 007
II. Lake States region:							
Michigan.....	64, 369	106, 194	200, 604	193, 539	196, 203	178, 015	193, 418
Minnesota.....	37, 295	129, 560	190, 454	191, 220	194, 399	189, 604	182, 456
Wisconsin.....	324, 509	506, 749	712, 565	690, 921	720, 781	733, 017	701, 011
Total.....	426, 173	742, 503	1, 103, 623	1, 075, 680	1, 111, 383	1, 101, 296	1, 076, 885
III-IV. All other States.....							
	258, 082	272, 986	582, 080	634, 821	763, 645	855, 018	855, 887
V. Pacific coast region:							
Washington.....	(1)	83, 575	109, 164	298, 349	349, 107	523, 948	566, 137
California and Oregon.....	2 83, 692	123, 990	178, 841	200, 869	213, 407	256, 546	248, 592
Total.....	83, 692	207, 565	378, 005	469, 218	562, 514	780, 494	814, 729
Aggregate.....	3 2, 495, 523	3, 517, 952	4, 394, 766	4, 313, 403	4, 510, 800	4, 862, 885	4 4, 630, 308
VALUE 4							
I. Northeastern region:							
Maine.....			\$40, 990, 531	\$39, 577, 990	\$39, 487, 603	\$43, 497, 951	\$35, 036, 454
New Hampshire.....			18, 358, 011	16, 719, 170	16, 949, 682	17, 977, 631	11, 646, 780
Vermont.....			1, 480, 162	1, 039, 285	628, 585	728, 067	584, 982
Massachusetts.....			2, 397, 577	2, 082, 891	2, 124, 524	1, 767, 501	-1, 640, 418
New York.....			35, 623, 629	32, 202, 650	28, 146, 895	28, 824, 543	25, 266, 671
Pennsylvania.....			17, 181, 558	15, 753, 242	15, 322, 022	14, 445, 046	11, 977, 893
Total.....			116, 031, 468	107, 375, 228	102, 659, 291	107, 210, 759	86, 153, 228
II. Lake States region:							
Michigan.....			9, 973, 525	9, 582, 235	9, 174, 245	8, 681, 479	8, 754, 909
Minnesota.....			7, 179, 034	7, 545, 141	7, 521, 922	6, 712, 776	5, 875, 711
Wisconsin.....			34, 826, 131	34, 874, 967	32, 773, 418	36, 012, 973	32, 590, 012
Total.....			51, 978, 690	52, 002, 343	49, 469, 585	51, 407, 228	47, 220, 632
III-IV. All other States.....							
			30, 489, 551	33, 375, 267	36, 206, 150	38, 944, 329	34, 576, 567
V. Pacific coast region:							
Washington.....			6, 709, 711	9, 201, 570	11, 974, 544	18, 574, 577	18, 103, 488
California and Oregon.....			4, 779, 942	5, 378, 258	6, 180, 899	7, 011, 203	6, 170, 650
Total.....			11, 489, 653	14, 579, 828	18, 155, 443	25, 585, 780	24, 274, 138
Aggregate.....			209, 989, 362	207, 332, 666	206, 490, 469	223, 178, 096	192, 224, 565

1 Included in "All other States."

2 Oregon only.

3 Inclusive of 4,117 tons of unclassified pulp.

4 Exclusive of data for small quantities of rayon and old magazine pulp.

5 Not reported in statistics for the years 1909 and 1919.

Between 1926 and 1930 the proportion of total production in the United States which came from the Northeastern region fell from 53 to 41 per cent; and the proportion for the Lake States fell from 25 to 23 per cent. On the other hand, the proportion for the Pacific coast region rose from 9 to 19 per cent. This increase for the Pacific Coast States is the more significant because the share of output which is produced for sale to unaffiliated paper mills is higher for that region than for any other region.

No general statistics of production are available by regions for 1931. The reports to the Tariff Commission from a large number of mills (see Table 36) show that the output of the Northeastern and Lake States regions fell sharply, and that the decline was less marked in the Pacific coast region and in the South.

EXPORTS

— The sales of domestic pulp to consumers in foreign countries form but a small part of the total production in this country. The exports in 1930 of 48,427 tons were the equivalent of about 1 per cent of total domestic production. Sulphite is the pulp principally exported. Canada, the United Kingdom, France, Argentina, and Japan were the leading countries in the order of their importance to which shipments were made in 1930.

The quantity and value of exports of domestic wood pulp are shown for specified years in Table 10.

TABLE 10.—Wood pulp: Domestic exports in specified years

[Source: U. S. Department of Commerce, Foreign Commerce and Navigation of the United States]

Year	Sulphite		Soda		Other		Total	
	Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value
	<i>Short tons</i>		<i>Short tons</i>		<i>Short tons</i>		<i>Short tons</i>	
1909 (fiscal year).....							11,564	\$448,960
1919 (calendar year).....							40,057	3,048,491
1926 (calendar year).....	23,380	\$1,345,686	1,793	\$132,690	9,047	\$605,848	34,220	2,084,224
1927 (calendar year).....	27,162	1,265,859	2,270	176,507	2,574	91,264	31,984	1,533,630
1928 (calendar year).....	24,945	1,308,459	2,734	194,325	5,805	276,395	32,364	1,779,179
1929 (calendar year).....	43,852	2,116,428	2,196	159,988	8,019	453,007	54,068	2,729,423
1930 (calendar year).....	34,973	1,670,784	2,025	140,774	11,428	258,995	48,427	2,070,553
1931 (calendar year) ¹	49,792	2,251,130	1,436	92,643	2,080	62,869	53,308	2,406,642

¹ Preliminary.

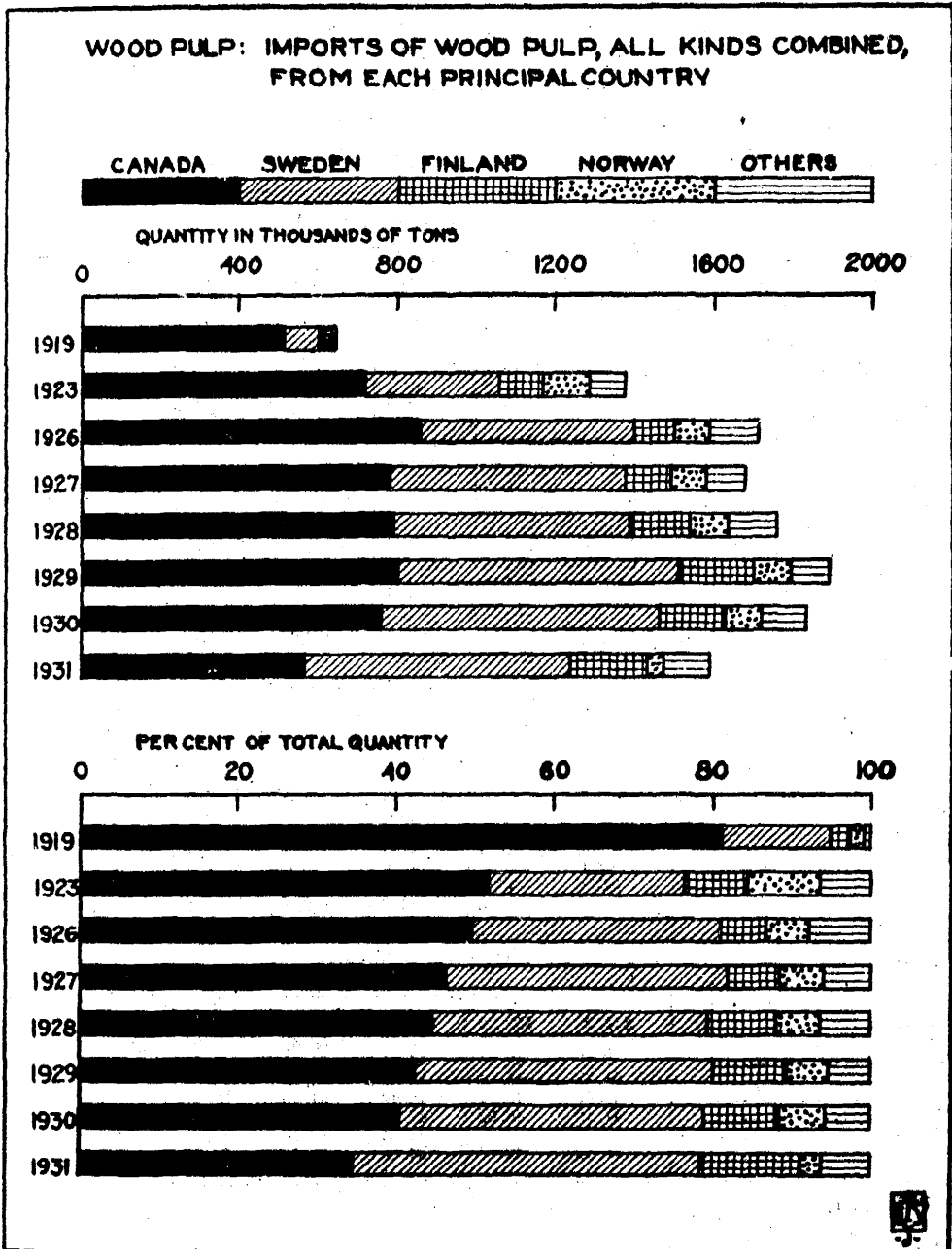
IMPORTS INTO THE UNITED STATES BY COUNTRIES OF ORIGIN

IMPORTS OF ALL KINDS OF PULP COMBINED

Table 11 shows for 1919, 1923, and each year since 1926 the quantity of imports of wood pulp (all kinds combined) into the United States from the principal individual countries, together with the corresponding value and the average unit value per ton. The quantity figures are shown graphically in chart G.

In 1931 Sweden was the largest source of imports of wood pulp in quantity and in value. Canada was the next most important source of supply. In that year Sweden furnished 43½ per cent of the total

CHART G



tonnage imported; Canada, 34½ per cent; and all other countries, principally northern European countries, 22 per cent. In order of rank the other principal sources were Finland, Germany, and Norway.

WOOD PULP AND PULPWOODS

TABLE 11.—Wood pulp: Imports of all kinds combined from each principal country

QUANTITY (TONS OF 2,000 POUNDS)

Year	All countries	Canada	Sweden	Norway	Finland	Germany	Other countries
1919.....	634, 016	516, 759	85, 579	12, 509	15, 327	-----	5, 842
1923.....	1, 363, 157	716, 904	342, 016	119, 901	110, 949	68, 255	27, 132
1926.....	1, 733, 634	861, 237	541, 065	91, 998	102, 293	92, 697	44, 364
1927.....	1, 679, 915	779, 224	598, 876	89, 528	112, 521	58, 600	41, 365
1928.....	1, 761, 538	788, 167	605, 070	94, 821	154, 325	72, 734	46, 491
1929.....	1, 886, 347	802, 320	708, 001	95, 706	176, 364	70, 364	33, 591
1930.....	1, 832, 562	737, 960	722, 820	94, 430	174, 197	74, 378	28, 577
1931 ¹	1, 587, 557	549, 959	692, 337	43, 266	193, 970	78, 901	29, 134

PER CENT OF TOTAL QUANTITY

1919.....	100.0	81.2	13.5	2.0	2.4	-----	0.9
1923.....	100.0	51.8	24.7	8.7	8.0	4.8	2.0
1926.....	100.0	49.7	31.2	5.3	5.9	5.4	2.6
1927.....	100.0	46.4	35.7	5.3	6.6	3.5	2.5
1928.....	100.0	44.7	34.3	5.4	8.8	4.1	2.6
1929.....	100.0	42.5	37.5	5.1	9.3	3.7	1.8
1930.....	100.0	40.3	39.4	5.2	9.5	4.1	1.6
1931 ¹	100.0	34.6	43.6	2.7	12.2	5.0	1.8

VALUE (IN THOUSANDS)

1919.....	\$37, 048	\$27, 298	\$7, 023	\$1, 439	\$1, 068	-----	\$200
1923.....	74, 744	38, 349	18, 657	6, 771	5, 695	\$4, 116	1, 156
1926.....	91, 346	42, 640	29, 763	5, 967	5, 085	5, 651	2, 240
1927.....	86, 042	37, 979	31, 535	5, 639	5, 037	3, 674	2, 178
1928.....	83, 838	36, 905	29, 285	5, 163	5, 928	4, 308	2, 249
1929.....	88, 946	36, 925	33, 643	5, 013	7, 430	4, 383	1, 552
1930.....	81, 243	32, 595	31, 380	4, 542	7, 109	4, 368	1, 249
1931 ¹	60, 521	23, 122	24, 160	1, 667	6, 737	3, 757	1, 078

PER CENT OF TOTAL VALUE

1919.....	100.0	73.7	19.0	3.9	2.9	-----	0.5
1923.....	100.0	51.3	25.0	9.0	7.6	5.5	1.5
1926.....	100.0	46.7	32.6	6.5	5.6	6.2	2.5
1927.....	100.0	44.2	36.7	6.6	5.8	4.3	2.5
1928.....	100.0	44.0	34.9	6.2	7.1	5.1	2.7
1929.....	100.0	41.5	37.8	5.6	8.4	4.9	1.8
1930.....	100.0	40.1	38.6	5.6	8.8	5.4	1.5
1931 ¹	100.0	38.2	39.9	2.8	11.1	6.2	1.8

AVERAGE VALUE PER TON

1919.....	\$58.25	\$52.82	\$82.06	\$115.06	\$70.99	-----	\$34.31
1923.....	54.04	53.49	54.55	56.47	51.33	\$32.12	42.61
1926.....	52.69	49.51	55.01	64.85	49.71	60.97	50.50
1927.....	51.22	48.74	52.66	63.13	44.77	62.70	52.65
1928.....	47.59	46.82	48.40	54.45	38.41	59.23	48.38
1929.....	47.15	46.02	47.52	52.36	42.12	62.36	46.24
1930.....	44.34	44.17	43.41	48.10	40.81	58.73	43.70
1931 ¹	38.12	42.04	34.90	38.52	34.73	47.62	37.01

¹ Preliminary.

Throughout recent years European countries have been gaining at the expense of Canada in supplying wood pulp to the United States. It should be borne in mind, however, that down to 1929 there was a steady increase in the imports of newsprint paper from Canada which served to enable that country to retain a fairly constant position in

the total supply of paper and paper materials to the United States. In 1926 Canada supplied 50 per cent of our total imports of wood pulp and Sweden 31 per cent, these proportions shifting to 34½ per cent and 43½ per cent, respectively, in 1931. There has also been a marked increase in the proportion of pulp imports coming from Finland; that country supplied 6 per cent of the total in 1926 and 12 per cent in 1931.

IMPORTS BY CLASSES

Table 12 shows for the last three years the imports of each of the principal classes of wood pulp from the several principal countries, in terms of quantity and of average unit value.

There are wide differences among the several kinds of pulp with respect to the relative importance of the different countries in supplying our imports. In 1931 Sweden was much the most important source of unbleached sulphite and unbleached sulphate, but Canada was the leading country of origin for bleached sulphite, bleached sulphate, and mechanically ground wood. Conversely, the principal kinds of pulp imported from Sweden are unbleached sulphite and sulphate, and the principal kinds imported from Canada are bleached sulphite and sulphate and ground wood. The position of Finland is similar to that of Sweden; it supplies chiefly unbleached sulphite and sulphate. From Norway, unlike Sweden and Finland, the most important kind imported is bleached sulphite. Bleached sulphite also dominates in the imports from Germany.

TABLE 12.—Wood pulp: Summary of imports¹

QUANTITY (TONS OF 2,000 POUNDS)

Item	All countries	Canada	Sweden	Norway	Finland	Germany	Other countries
All kinds:							
1929.....	1,886,346	802,320	708,001	95,706	176,364	70,364	33,591
1930.....	1,832,362	737,960	722,820	94,430	174,197	74,378	28,577
1931.....	1,587,557	549,959	692,337	43,266	193,970	78,891	29,124
Sulphite, unbleached:							
1929.....	785,631	213,443	392,169	20,524	122,216	18,841	18,448
1930.....	744,855	190,838	382,159	22,691	111,845	21,330	16,052
1931.....	600,331	99,236	336,765	11,418	109,163	24,877	18,872
Sulphite, bleached:							
1929.....	374,343	209,965	52,843	44,029	8,183	50,928	8,375
1930.....	361,632	202,948	49,713	41,163	7,936	51,625	8,247
1931.....	364,044	207,240	54,951	20,172	9,993	52,814	8,874
Sulphate, unbleached:							
1929.....	430,086	123,610	251,296	18,372	30,361	231	6,216
1930.....	400,457	72,975	271,112	14,640	37,452	156	4,122
1931.....	385,857	36,082	282,495	4,883	60,112	897	1,388
Mechanically ground, unbleached: ²							
1929.....	258,017	240,364	7,293	1,379	8,453	28	-----
1930.....	281,434	254,376	9,098	5,198	11,801	961	-----
1931.....	197,351	181,005	6,012	1,719	8,614	-----	-----
All other:							
1929.....	88,269	14,948	4,850	10,902	7,151	336	562
1930.....	43,984	16,822	10,738	10,798	5,153	306	156
1931.....	49,974	26,396	12,113	5,074	6,088	308	-----

¹ 1931 preliminary.

² General imports are not segregated as to bleached and unbleached ground wood. Segregation has been made on the basis of imports for consumption.

WOOD PULP AND PULFWOODS

TABLE 12.—Wood pulp: Summary of imports—Continued

VALUE (IN THOUSANDS)

Item	All countries	Canada	Sweden	Norway	Finland	Germany	Other countries
All kinds:							
1929.....	\$58,946	\$36,925	\$33,643	\$5,013	\$7,430	\$4,383	\$1,552
1930.....	81,243	32,595	31,380	4,542	7,109	4,368	1,249
1931.....	60,521	23,122	24,160	1,667	6,737	3,757	1,078
Sulphite, unbleached:							
1929.....	35,329	9,148	18,315	1,026	5,133	935	772
1930.....	33,194	8,048	17,486	1,117	4,820	1,079	645
1931.....	22,848	3,755	12,946	422	4,127	955	648
Sulphite, bleached:							
1929.....	25,339	14,462	3,610	2,891	452	3,414	510
1930.....	22,722	13,120	3,053	2,490	388	3,238	438
1931.....	18,710	11,642	2,581	962	457	2,766	402
Sulphate, unbleached:							
1929.....	20,519	6,793	11,327	848	1,287	9	255
1930.....	10,452	4,026	10,283	562	1,419	6	155
1931.....	12,038	1,926	8,149	145	1,786	24	33
Mechanically ground, unbleached:							
1929.....	5,938	5,547	180	26	184	1	-----
1930.....	6,731	6,116	202	102	279	32	-----
1931.....	4,211	3,840	127	34	209	-----	-----
All other:							
1929.....	1,821	975	211	222	374	24	15
1930.....	2,144	1,285	356	271	203	18	11
1931.....	2,719	2,058	357	104	188	12	-----

UNIT VALUE (PER SHORT TON)

Sulphite, unbleached:							
1929.....	\$44.97	\$42.86	\$46.70	\$50.01	\$42.00	\$49.60	\$41.87
1930.....	44.56	42.17	45.76	49.34	43.09	50.57	40.16
1931.....	38.06	37.84	38.44	36.96	37.81	38.37	34.05
Sulphite, bleached:							
1929.....	67.69	68.88	68.30	65.65	55.19	67.03	60.94
1930.....	62.83	64.65	61.41	60.50	48.92	62.63	53.09
1931.....	52.85	55.70	46.97	47.68	45.69	52.38	45.33
Sulphate, unbleached:							
1929.....	47.71	54.95	45.08	46.14	42.39	39.81	40.99
1930.....	41.08	55.17	37.93	38.39	37.90	39.87	37.61
1931.....	31.18	53.38	28.85	29.65	29.21	26.59	24.01
Mechanically ground, unbleached:							
1929.....	23.02	23.08	24.73	13.84	21.77	35.71	-----
1930.....	23.91	24.04	22.20	19.62	23.64	33.30	-----
1931.....	21.34	21.31	21.11	19.51	24.29	-----	-----

Tables 13, 14, and 15 show details as to the source of imports of wood pulp since 1926. In the case of unbleached sulphite and unbleached sulphate there has been a marked decline in the proportion supplied by Canada, with a corresponding increase in the relative importance of the principal European countries. Canada has lost slightly in its proportion of the ground wood pulp, but is still by far the principal source. In the case of bleached sulphite, which is imported in rather large quantities, Canada has gained slightly as compared with the European countries between 1926 and 1931. In the case of bleached sulphate, which is a class of relatively minor importance, Canada was formerly an insignificant source of supply but has now become by far the leading factor.

TABLE 13.—Wood pulp: Imports of sulphite pulp, from principal countries

[Source: U. S. Department of Commerce, Foreign Commerce and Navigation]

Country and year	Unbleached				Bleached			
	Quantity (short tons)	Per cent of quantity	Value	Unit value	Quantity (short tons)	Per cent of quantity	Value	Unit value
1926								
Canada.....	253,291	36	\$12,131,685	\$47.84	171,095	52	\$12,661,100	\$74.00
Finland.....	69,220	10	3,373,509	48.74	3,069	1	196,160	64.24
Germany.....	60,822	9	3,336,132	54.85	28,657	9	2,154,483	74.15
Norway.....	20,847	3	1,215,664	58.31	58,868	15	3,894,649	78.86
Sweden.....	274,316	38	14,713,038	53.64	65,658	20	4,066,771	61.94
All other.....	25,898	4	1,262,451	48.76	10,452	3	734,767	70.30
Total.....	704,394	100	37,032,470	52.57	330,196	100	23,677,929	71.71
1927								
Canada.....	201,186	29	9,768,309	48.55	191,835	55	13,629,526	71.05
Finland.....	78,619	12	3,600,884	45.69	3,146	2	231,102	73.43
Germany.....	28,845	4	1,603,508	55.17	28,382	8	1,986,139	69.96
Norway.....	19,877	3	1,079,443	54.31	55,919	16	3,941,366	70.48
Sweden.....	335,860	49	17,161,063	51.10	51,933	15	3,446,338	66.36
All other.....	23,532	3	1,149,578	48.85	15,251	4	940,155	61.65
Total.....	687,619	100	34,262,845	49.84	348,466	100	24,224,626	69.52
1928								
Canada.....	201,321	28	9,026,723	44.84	198,025	58	13,778,635	69.56
Finland.....	103,911	14	4,074,988	39.22	1,680	1	82,054	48.84
Germany.....	26,805	4	1,300,955	48.53	44,343	13	2,931,004	66.10
Norway.....	26,271	4	1,215,464	46.27	45,037	13	3,014,596	66.94
Sweden.....	332,786	46	15,834,872	47.58	40,555	12	2,616,693	64.47
All other.....	28,445	4	1,134,102	42.89	15,207	4	945,442	62.17
Total.....	717,639	100	32,587,134	45.42	344,877	100	23,368,424	67.76
1929								
Canada.....	213,433	27	9,147,730	42.86	209,965	56	14,461,710	68.88
Finland.....	122,216	16	5,132,633	42.00	8,133	2	451,584	55.19
Germany.....	18,841	2	934,490	49.60	50,928	14	3,413,935	67.08
Norway.....	20,524	3	1,026,400	50.01	44,029	12	2,890,576	65.66
Sweden.....	392,169	50	18,315,337	46.70	52,863	14	3,610,430	68.30
All other.....	18,448	2	772,393	41.87	8,375	2	510,368	60.94
Total.....	785,631	100	35,328,982	44.97	374,343	100	25,338,603	67.69
1930								
Canada.....	190,838	26	8,043,132	42.17	202,948	57	13,119,599	64.65
Finland.....	111,845	15	4,819,695	43.09	7,936	2	388,223	48.92
Germany.....	21,330	3	1,078,768	50.57	51,625	14	3,233,072	62.63
Norway.....	22,631	3	1,116,503	49.34	41,163	11	2,490,381	60.50
Sweden.....	382,159	51	17,485,839	45.76	49,713	14	3,032,787	61.41
All other.....	18,052	2	642,671	40.16	8,247	2	437,867	53.09
Total.....	744,355	100	33,192,598	44.56	361,632	100	22,721,929	62.83
1931								
Canada.....	99,236	17	3,754,962	37.84	207,240	58	11,542,298	55.70
Finland.....	109,168	18	4,127,880	37.81	9,993	3	456,535	45.69
Germany.....	24,877	4	954,613	38.37	52,814	15	2,766,390	52.36
Norway.....	11,418	2	421,988	36.96	20,172	6	961,793	47.68
Sweden.....	336,765	56	12,946,221	38.44	54,951	15	2,580,894	46.97
All other.....	18,872	3	642,623	34.05	8,874	3	402,248	45.33
Total.....	600,331	100	22,847,787	38.06	354,044	100	18,710,158	52.85

TABLE 14.—Wood pulp: Imports of sulphate pulp from principal countries

[Source: U. S. Department of Commerce, Foreign Commerce and Navigation]

Country and year	Unbleached				Bleached			
	Quantity (short tons)	Per cent of quantity	Value	Unit value	Quantity (short tons)	Per cent of quantity	Value	Unit value
1926								
Canada.....	156,662	42	\$9,323,049	\$59.51	838	5	\$46,377	\$55.34
Finland.....	24,856	7	1,264,028	50.86	3,151	17	180,935	57.42
Germany.....	1,867	1	108,604	58.17	307	2	23,417	76.28
Norway.....	12,179	3	706,442	58.00	1,035	6	69,327	66.93
Sweden.....	177,930	47	9,720,476	54.63	12,257	67	702,538	57.32
All other.....	1,485		70,861	47.72	497	3	26,068	52.45
Total.....	374,979	100	21,193,459	56.52	18,065	100	1,048,662	57.99
1927								
Canada.....	155,299	41	9,029,923	58.15				
Finland.....	15,757	4	718,894	45.62	6,197	52	356,683	57.56
Germany.....	605		34,893	57.67	501	4	35,392	70.64
Norway.....	11,574	3	576,094	49.77	399	3	22,538	56.49
Sweden.....	197,617	52	10,262,487	51.93	4,987	41	294,099	58.97
All other.....	1,249		62,007	49.65				
Total.....	382,101	100	20,684,298	54.13	12,084	100	706,712	58.65
1928								
Canada.....	156,738	36	8,718,018	55.62	2,054	13	143,815	69.77
Finland.....	32,304	8	1,301,769	40.30	3,692	22	229,714	62.22
Germany.....	1,224		55,301	45.18	221	1	14,796	66.95
Norway.....	17,040	4	824,491	48.39	613	4	35,120	57.29
Sweden.....	216,323	51	10,136,956	46.86	9,645	59	465,364	48.26
All other.....	3,378	1	134,413	39.79	116	1	6,278	54.12
Total.....	427,007	100	21,170,948	49.58	16,341	100	894,587	54.74
1929								
Canada.....	123,610	29	6,792,782	54.95	6,635	39	544,094	82.00
Finland.....	30,361	7	1,286,894	42.39	5,375	31	332,993	61.95
Germany.....	231		9,196	39.81	336	2	23,906	71.16
Norway.....	18,372	4	847,694	46.14	756	4	42,791	56.90
Sweden.....	251,296	59	11,327,331	45.08	3,796	22	183,626	48.37
All other.....	6,216	1	254,780	40.99	310	2	12,410	40.03
Total.....	430,086	100	20,518,676	47.71	17,208	100	1,139,820	66.24
1930								
Canada.....	72,975	18	4,026,301	55.17	12,505	57	1,026,074	82.05
Finland.....	37,452	9	1,419,362	37.90	2,445	11	133,787	54.72
Germany.....	156		6,220	39.87	256	1	15,955	62.32
Norway.....	14,640	4	561,991	38.39	693	3	47,286	68.28
Sweden.....	271,112	68	10,283,488	37.93	5,822	27	234,654	40.30
All other.....	4,122	1	155,019	37.61	156	1	10,843	69.51
Total.....	400,457	100	16,452,381	41.08	21,877	100	1,468,599	67.18
1931								
Canada.....	36,082	9	1,926,022	53.88	22,942	69	1,891,099	82.43
Finland.....	60,112	16	1,756,804	29.21	2,264	7	101,603	44.88
Germany.....	897		23,849	26.59	160		6,851	42.82
Norway.....	4,883	1	144,777	29.65	28		1,479	52.82
Sweden.....	282,495	74	8,149,021	28.85	7,851	24	266,058	33.89
All other.....	1,388		33,325	24.01				
Total.....	385,857	100	12,032,798	31.18	33,245	100	2,267,090	68.19

TABLE 15.—Wood pulp: Imports of ground wood pulp from principal countries

[Source: U. S. Department of Commerce, Foreign Commerce and Navigation]

Country and year	Unbleached and bleached			
	Quantity (short tons)	Per cent of quantity	Value	Unit value
1926				
Canada.....	279,269	92	\$7,473,747	\$26.76
Finland.....	1,774	1	59,519	33.55
Germany.....	645	—	28,799	44.65
Norway.....	7,072	2	110,437	15.62
Sweden.....	8,999	3	461,230	51.25
All other.....	6,000	2	144,488	24.08
Total.....	303,759	100	8,278,220	27.25
1927				
Canada.....	230,681	94	5,535,999	24.00
Finland.....	6,789	2	173,307	25.53
Germany.....	568	—	14,365	25.29
Norway.....	1,559	1	19,604	12.70
Sweden.....	5,985	2	249,719	41.72
All other.....	1,333	1	26,248	19.69
Total.....	246,915	100	6,019,402	24.38
1928				
Canada.....	226,668	91	5,027,124	22.18
Finland.....	12,626	5	233,773	18.52
Germany.....	141	—	5,742	40.72
Norway.....	5,851	2	73,189	12.48
Sweden.....	2,560	1	74,870	29.25
All other.....	1,372	1	26,827	21.00
Total.....	249,128	100	5,443,495	21.85
1929				
Canada.....	243,000	89	5,604,439	23.06
Finland.....	10,229	4	325,186	22.01
Germany.....	28	—	685	24.46
Norway.....	12,025	4	206,655	17.10
Sweden.....	7,877	3	206,544	26.22
All other.....	242	—	3,267	13.50
Total.....	273,461	100	6,245,776	22.84
1930				
Canada.....	264,434	85	6,117,020	24.04
Finland.....	14,529	5	348,348	23.99
Germany.....	961	—	32,107	33.41
Norway.....	15,304	5	325,758	21.29
Sweden.....	14,013	5	323,057	23.05
Total.....	299,232	100	7,146,290	23.88
1931				
Canada.....	181,037	86	3,842,791	21.23
Finland.....	12,438	6	295,760	23.78
Germany.....	153	—	5,234	34.21
Norway.....	6,765	3	136,114	20.12
Sweden.....	10,275	5	218,123	21.23
Total.....	210,668	100	4,498,022	21.35

III. QUANTITATIVE CHANGES IN IMPORTS, PRODUCTION AND SALES BY PULP MILLS, AND RECEIPTS BY PAPER MILLS, AS RELATED TO CURRENCY DEPRECIATION

INTRODUCTION

In considering the facts with regard to production, imports, and prices of wood pulp during recent months, since September, when the exchange of the principal foreign pulp-producing countries first became depreciated, it is necessary to compare whatever trends may be revealed with trends prior to the beginning of currency depreciation. It is also desirable to compare the trends with respect to wood pulp with the trends with respect to commodities in general.

Certain of the broader movements in the wood pulp industry and trade have been brought out by the annual statistics presented in Section II. A more nearly precise picture requires the consideration of monthly data, which are shown in the present section of this report. The trends already brought to light by the annual statistics may be briefly summarized as follows:

(a) There had been a substantially unbroken increase in United States consumption of wood pulp for a series of years preceding 1929 but, in harmony with the general decline in industry and commerce, there was a decrease in consumption in 1930 and a further decrease in 1931.

(b) Although imports during recent years have been a much larger proportion of total domestic consumption of wood pulp than before the World War or immediately after the war, there was little change between 1926 and 1931 in the ratio of imports to domestic production.

(c) Throughout recent years and in times when the currency of all the countries concerned was at par, imports from northern European countries, whose currency is now depreciated, were gaining relatively at the expense of imports from Canada.

(d) During the past decade the production in the Northeastern States (New England, New York, and Pennsylvania) has become a constantly smaller proportion of the total output. At the same time there has been a very marked gain in the proportion supplied by the Pacific coast and the South.

(e) The greater part of the domestic production of wood pulp is by integrated concerns which consume their pulp in manufacturing paper in the same or affiliated plants. Largely because of the increased production on the Pacific coast, however, the quantity of pulp produced for sale to independent converting mills increased rapidly between 1925 and 1929.

(f) Those paper mills which do not have their own domestic supply of pulp have in all recent years imported much more pulp than they have bought from domestic producers.

In considering the effect of currency depreciation in the wood-pulp trade, statistics relating to quantities are shown first and later on (Section IV) those of average unit prices and average unit import values (in certain of the tables in Section III, however, average prices or values are also shown). The effect of currency depreciation, if any, might be expected to show itself in the quantities of imports, the amount of pulp contracted for future delivery by importers, the output of domestic pulp mills, both for transfer to affiliated paper mills and for sale to unaffiliated concerns, and the relative receipts of pulp

by paper mills from domestic concerns, affiliated or unaffiliated, and from foreign sources. These different aspects are taken up in the order named.

IMPORTS, CONTRACTS FOR EUROPEAN PULP, AND RECEIPTS OF FOREIGN PULP BY PAPER MILLS

IMPORTS SINCE DEPRECIATION SET IN (OCTOBER-MARCH) COMPARED WITH PREVIOUS PERIODS

It would hardly be expected that the quantity of pulp actually arriving in the United States from countries with depreciated currency could be affected materially for a few weeks after depreciation set in. Time is involved in the negotiation of contracts as well as in transportation. Depreciation began in most of the pulp-producing countries about September 25. It could hardly be expected to have exercised much influence on the imports for October. Nevertheless, as a convenient summary the total imports for the six months from October to March, inclusive, have been computed, and these have been compared with the imports for the same period of 1930-31. In view of the fact that the comparison between these two periods might be affected by a general downward trend in the pulp industry and trade, the comparison between these two periods is set over against a comparison between the nine months January to September, 1931, and the same nine months of 1930. It is scarcely appropriate to compare the average monthly imports of the period since depreciation began with those for the earlier months of 1931, for the reason, brought out more fully in subsequent tables, that the imports are apparently affected by seasonal causes.

Table 16 presents this comparison for the imports of all pulp and of each of the principal kinds, from all countries, and from each of the principal sources of supply. Of these sources, Canada, Sweden, and Finland have depreciated currency, and Germany, which is important only in the importation of bleached sulphite pulp, is on the gold standard.

TABLE 16.—Wood pulp: Ratio of quantity imported in specified periods to the quantity imported during the same period one year earlier

Kind	Ratio (per cent) of quantity in period specified to same period 1 year earlier				
	All countries	Canada	Sweden	Finland	Germany
Total all pulp—					
October, 1931-March, 1932.....	107	83	119	137	(1)
January-September, 1931.....	84	73	95	105	(1)
Sulphite, unbleached—					
October, 1931-March, 1932.....	103	49	117	104	(1)
January-September, 1931.....	79	54	87	96	(1)
Sulphite, bleached—					
October, 1931-March, 1932.....	103	109	88	(1)	90
January-September, 1931.....	99	99	130	(1)	106
Sulphate, unbleached—					
October, 1931-March, 1932.....	138	56	137	363	(1)
January-September, 1931.....	88	45	101	122	(1)
Sulphate, bleached—					
October, 1931-March, 1932.....	64	114	3	(1)	(1)
January-September, 1931.....	207	226	311	(1)	(1)
Mechanical, unbleached—					
October, 1931-March, 1932.....	90	87	(1)	107	(1)
January-September, 1931.....	67	68	(1)	79	(1)

¹ Imports unimportant.

No conclusion as to the influence of currency depreciation on imports should be drawn from this table without taking into consideration also the facts regarding contracts for European pulp set forth in Table 20.

The total imports of wood pulp of all kinds from all countries during the six months October, 1931, to March, 1932, averaged 159,913 tons monthly (the absolute figures are shown in Table 17). The corresponding average for October, 1930, to March, 1931, was 148,978 tons. Imports during the later period were thus equal to 107 per cent of those one year earlier. During the period January to September, 1931, the imports were 84 per cent of the total for the corresponding period of 1930.

As pointed out in Section I, the depreciation of the currency has been much more marked in Sweden and Finland than in Canada and somewhat greater in Finland than in Sweden. In interpreting the relative recent movements of imports from these three countries, however, regard should be given to the general trend of earlier years, showing a relative gain for European countries as compared with Canada and a particularly marked gain for Finland as compared with all other countries.

The preceding tables bring out considerable differences in movement as between the several kinds of pulp. There was a marked increase during the period October, 1931, to March, 1932, as compared with the same period one year earlier in imports of unbleached sulphate, in which Finland is an important factor. Decreases appeared in the imports of bleached sulphate and unbleached mechanical pulp.

Tables 17, 18, and 19 show the absolute figures for which relatives were presented in Table 16 and also show data for each month from October, 1931, to March, 1932, and relatives comparing each month with the same month of the preceding year.

TABLE 17.—Wood pulp: Total imports during specified months or periods in comparison with imports during the same periods or months one year earlier

(Quantity in tons of 2,000 pounds)

	All countries	Canada	Other countries (practically all European)				
			Total	Sweden	Finland	Norway	Other
October, 1931.....	137,020	52,263	84,757	53,613	14,559	3,658	12,927
November, 1931.....	183,123	52,399	130,724	92,683	32,325	5,716	.....
December, 1931.....	135,437	43,422	92,015	63,031	13,830	5,755	9,399
January, 1932.....	211,292	36,238	175,054	139,667	17,948	6,164	11,275
February, 1932.....	191,071	41,499	149,572	113,333	15,805	8,910	11,524
March, 1932.....	101,229	38,531	62,698	24,921	17,003	12,195	7,979
Averages:							
October, 1931-March, 1932.....	159,913	44,110	115,803	81,208	18,678	7,066	8,851
October, 1930-March, 1931.....	148,978	53,222	95,756	68,054	13,532	5,750	8,420
January-September, 1931.....	125,775	44,653	81,122	53,668	14,806	3,128	9,522
January-September, 1930.....	149,499	61,675	87,824	56,472	14,096	8,722	8,534
Relative to same month or period 1 year earlier (per cent)							
October, 1931.....	97	78	114	111	128	70	136
November, 1931.....	106	90	114	110	164	134	.....
December, 1931.....	79	75	80	76	85	89	101
January, 1932.....	116	93	122	119	135	103	162
February, 1932.....	148	87	184	180	233	213	161
March, 1932.....	105	77	136	192	128	145	72
October, 1931-March, 1932.....	107	83	121	119	138	123	105
January-September, 1931.....	84	72	92	95	105	86	112

TABLE 18.—*Chemical wood pulp: Imports by kinds during specified months and periods in comparison with imports during same months or periods one year earlier*

Month	Sulphite, unbleached				Sulphite, bleached			
	Total	Sweden	Finland	Canada	Total	Canada	Sweden	Germany
Quantity (tons of 2,000 pounds)								
October, 1931.....	53,014	29,882	8,509	7,883	29,169	16,679	3,044	5,305
November, 1931.....	62,068	36,795	17,352	5,439	31,910	24,175	4,610	2,620
December, 1931.....	46,789	29,571	7,129	5,581	25,268	14,413	3,295	2,661
January, 1932 ¹	94,555	75,758	8,133	5,067	34,372	13,293	8,914	4,225
February, 1932 ¹	80,606	62,440	6,748	5,401	38,528	17,153	8,148	5,219
March, 1932 ¹	34,388	10,438	10,381	6,602	32,197	17,198	4,490	3,211
Average:								
October, 1931—March, 1932.....	61,900	40,814	9,709	5,996	31,911	17,152	5,417	3,874
January—September, 1931.....	48,719	26,724	8,464	8,926	29,742	16,886	4,889	4,692
Relative to same month or period of 1 year earlier (per cent)								
October, 1931.....	101	115	109	64	96	93	59	133
November, 1931.....	81	84	130	32	105	142	79	83
December, 1931.....	73	81	63	49	83	97	67	57
January, 1932 ¹	108	116	77	57	95	106	61	114
February, 1932 ¹	158	196	180	46	151	114	199	146
March, 1932 ¹	100	171	114	53	98	99	216	48
Average:								
October, 1931—March, 1932.....	108	117	104	49	103	109	88	90
January—September, 1931.....	79	87	96	54	99	99	130	106
Sulphate, unbleached								
Sulphate, bleached								
	Total	Sweden	Finland	Canada	Total	Canada	Sweden	Germany
Quantity (tons of 2,000 pounds)								
October, 1931.....	30,682	19,533	5,041	5,641	2,225	2,121		
November, 1931.....	65,940	50,503	12,181	2,626	1,938	1,859	20	
December, 1931.....	36,655	28,068	5,537	1,105	3,841	3,610	63	
January, 1932 ¹	62,681	53,936	6,732	1,240	2,036	1,410	168	
February, 1932 ¹	49,661	41,484	4,048	2,034	2,841	2,756		
March, 1932 ¹	19,809	9,305	6,205	1,683	2,400	2,225	86	
Average:								
October, 1931—March, 1932.....	44,238	33,805	6,624	2,388	2,547	2,330	56	
January—September, 1931.....	28,064	20,488	4,151	2,968	2,804	1,706	862	
Relative to same month or period of 1 year earlier (per cent)								
October, 1931.....	137	125	327	133	51	76		
November, 1931.....	152	148	440	56	232	222	(²)	
December, 1931.....	79	73	250	24	86	174		3
January, 1932 ¹	180	187	1,124	29	23	72		2
February, 1932 ¹	145	154	240	46	156	184		
March, 1932 ¹	185	207	291	50	70	72		159
Average:								
October, 1931—March, 1932.....	138	137	363	56	64	114		3
January—September, 1931.....	88	101	122	45	207	226		311

¹ Preliminary.² No imports in corresponding period of preceding year.

TABLE 19.—*Mechanical wood pulp: Imports, by kinds, during specified months and periods in comparison with imports during the same months or periods one year earlier*

Month	Unbleached			Bleached		
	Total	Canada	Finland	Total	Norway	Sweden
Quantity (tons of 2,000 pounds)						
October, 1931.....	20,694	19,851	278	1,148	252	784
November, 1931.....	20,420	18,088	1,762	646	461	185
December, 1931.....	20,399	18,607	610	2,359	952	1,208
January, 1932 ¹	16,586	14,918	569	753	241	73
February, 1932 ¹	17,956	13,848	3,194	1,172	796	375
March, 1932 ¹	12,001	10,823	458	374	302	16
Average:						
October, 1931-March, 1932.....	18,019	16,022	1,128	1,075	501	438
January-September, 1931.....	15,093	13,829	673	1,017	375	232
Relative to same month or period of 1 year earlier (per cent)						
October, 1931.....	67	68	20	205	90	280
November, 1931.....	100	97	128	49	183	(²)
December, 1931.....	77	76	37	411	166	(²)
January, 1932 ¹	128	135	75	53	108	46
February, 1932 ¹	121	97	691	138	316	(²)
March, 1932 ¹	84	81	54	168	270	63
Average:						
October, 1931-March, 1932.....	90	87	107	131	177	567
January-September, 1931.....	67	68	79	60	83	45

¹ Preliminary.

² No imports in corresponding period of preceding year.

COMPARISON OF IMPORTS, CONTRACTS FOR IMPORTED PULP, AND RECEIPTS OF FOREIGN PULP BY PAPER MILLS

There are available to the Tariff Commission three sources of information concerning the quantity movements of imported pulp. These are (a) the data of actual imports, representing arrivals at the border of the United States, chiefly at seaports; (b) the contracts made by importers for sale of European pulp in the United States; and (c) the actual receipts of foreign pulp by paper mills reporting to the Tariff Commission. The data concerning contracts were obtained from importers who handle approximately 90 per cent of the total importation of European pulp and may be considered representative of the contracts by all importers of such pulp. The returns for paper mills represent mills having approximately 17 per cent of the total consumption of wood pulp in the United States and approximately one-third of the consumption of foreign pulp. The proportion is believed to be sufficiently large so that the relative movements from month to month may be taken as representing, with approximate accuracy, the changes in total consumption of foreign pulp.

It is not to be expected that these three sets of figures would run in close parallel from month to month or even from quarter to quarter. It is the practice of the trade for both domestic producers and importers of foreign pulp to let contracts for delivery either at one

definite future date or during a future period. The imports during a given month have very little relation to the contracts let during that month; they may rise or fall according to contracts let some time previously.

It should be noted, further, with respect to the statistics of contracts let, that in certain cases an importer replaces an existing contract by a new contract, especially when price changes are made. The contracts during a given month may thus not represent altogether new business.

Moreover, it would not be expected that the receipts of foreign pulp by the paper mills would correspond closely in movement with the imports. Certain of the importers maintain stocks at the seaports or elsewhere. The imports of a given month may in part go directly to paper mills and in part to these stocks. Conversely, the receipts of paper mills during a given month may partly represent imports during that month and partly deliveries from importers' stocks.

Table 20 summarizes, by quarters, the above-mentioned statistics of foreign pulp.

TABLE 20.—Comparison of imports, contracts for European pulp, and receipts of foreign pulp by paper mills, by quarters

Year and quarter	Total imports		Imports from Europe		Contracts let for European pulp		Receipts of foreign pulp by paper mills	
	Tons	Relative to 1930 average	Tons	Relative to 1930 average	Tons	Relative to 1930 average	Tons	Relative to 1930 average
	<i>Per cent</i>		<i>Per cent</i>		<i>Per cent</i>		<i>Per cent</i>	
1929								
January-March.....	137, 034	90	76, 821	84	60, 729	67	56, 802	103
April-June.....	155, 443	102	88, 259	97	98, 586	109	64, 012	116
July-September.....	167, 447	110	98, 789	106	64, 192	71	60, 949	110
October-December.....	169, 244	111	97, 869	107	65, 842	73	61, 725	112
1930								
January-March.....	182, 266	119	111, 406	122	56, 221	62	57, 224	104
April-June.....	126, 044	83	69, 375	76	123, 790	137	50, 613	92
July-September.....	140, 187	92	82, 090	91	91, 562	101	53, 442	97
October-December.....	162, 231	106	101, 286	112	89, 863	99	59, 670	108
1931								
January-March.....	135, 726	89	90, 227	99	87, 940	97	57, 880	105
April-June.....	105, 518	69	58, 504	64	122, 196	136	56, 728	103
July-September.....	126, 081	89	94, 635	104	125, 987	139	57, 994	105
October-December.....	151, 860	99	102, 497	113	96, 124	106	62, 462	113
1932								
January-March.....	167, 967	110	129, 108	142				

This table shows marked variations in the importations of wood pulp, both from all countries combined and from European countries. These variations may be due in part to seasonal conditions either of production and transportation or of demand. The variations in actual arrival of imports have been considerably greater than those in the receipts of foreign pulp by paper mills, indicating apparently that the flow to the mills is flattened out by changes in importers' stocks. Both in 1930 and in 1931, imports were decidedly

larger in the third quarter than in the second and decidedly larger in the fourth quarter than in the third. This was true both of imports from all countries and of imports from Europe. Total imports increased about 11 per cent during the third quarter of 1930 as compared with the second and about 16 per cent during the fourth as compared with the third. In 1931 the third quarter showed an increase of over 20 per cent, and the fourth quarter, an increase of about 12 per cent.

The imports from January to March, 1932, were larger than in any previous quarter since the first quarter of 1930, principally because of exceptionally large imports during January and February (for monthly data see Table 22). The connection between these imports and the depreciation of currency in pulp-producing countries is not altogether clear in view of the statistics concerning contracts let for European pulp. These contracts were much larger during the second and third quarters of 1931 than for several quarters preceding and, on the other hand, contracts fell off materially during the months from October to December, 1931. It would require extremely elaborate analysis to ascertain the dates of the contracts under which the imports of recent months were made.

The receipts of foreign pulp by paper mills during the last quarter of 1931 were, of course, in considerable part under contracts made prior to that quarter. The total receipts for this period were about 7 per cent greater than during the third quarter of 1931 and about 5 per cent greater than during the last quarter of 1930. The increase from the third to the fourth quarter of 1931 was, however, less marked than that from the third to the fourth quarter of 1930.

IMPORTS FROM PRINCIPAL COUNTRIES, BY QUARTERS, ALL KINDS OF PULP COMBINED

Table 21 shows the average monthly imports since 1929 of wood pulp of all kinds combined from each principal country, by quarters. The table shows a marked decline in the imports from Canada since the fourth quarter of 1929. On the other hand, the imports from European countries as a group, while showing marked variations from quarter to quarter, were on the whole maintained throughout 1930 and 1931 and in the first quarter of 1932 were exceptionally large. The proportion represented by imports from European countries thus rose materially, this being in consonance with the trend shown by the annual statistics for a number of years past.

Imports from Canada during the fourth quarter of 1931 showed a considerable increase as compared with the third quarter, the gain being greater than during the corresponding period of 1930. In the case of imports from European countries, the increase from the third to the fourth quarter of 1931 was much less marked than from the third to the fourth quarter of 1930, and also much less marked than from the second to the third quarter of 1931. The imports from Canada during the first quarter of 1932 were less than during the last quarter of 1931 but those from Europe showed a considerable increase by reason of the large imports during January, to which reference has already been made.

TABLE 21.—Average monthly imports of wood pulp (all kinds combined), from principal countries, by quarters

[Tons of 2,000 pounds]

Year and quarter	Total	Canada	Other (practically all from Europe)				
			Total	Sweden	Finland	Norway	Other
1929:							
First.....	137,034	60,213	76,821				
Second.....	155,443	67,184	88,259				
Third.....	167,447	68,658	98,789				
Fourth.....	169,244	71,385	97,859				
1930:							
First.....	182,266	70,861	111,405	73,902	15,858	10,940	10,705
Second.....	126,044	56,669	69,375	39,852	14,006	8,447	7,070
Third.....	140,187	57,496	82,691	55,663	12,423	6,778	7,827
Fourth.....	162,231	60,945	101,286	71,747	15,787	5,312	8,440
1931:							
First.....	135,726	45,499	90,227	64,362	11,277	6,180	8,399
Second.....	105,518	47,014	58,504	31,092	16,659	1,782	8,971
Third.....	136,081	41,446	94,635	65,548	16,483	1,408	11,196
Fourth.....	151,860	49,361	102,499	69,776	20,238	5,043	7,442
1932: First.....	167,967	38,859	129,108	92,640	17,119	9,090	10,259
Relative to monthly average: 1930=100 ¹							
1929:							
First.....	90	98	84				
Second.....	102	109	97				
Third.....	110	112	108				
Fourth.....	111	116	107				
1930:							
First.....	119	115	122	123	109	139	126
Second.....	83	92	76	66	96	107	83
Third.....	92	94	91	92	86	86	92
Fourth.....	106	99	111	119	109	67	99
1931:							
First.....	89	74	99	107	78	79	99
Second.....	69	76	64	52	115	23	105
Third.....	89	67	104	109	114	18	131
Fourth.....	99	80	112	116	139	64	87
1932: First.....	110	63	142	154	118	116	121

¹ Relatives based on monthly averages of short tons.

IMPORTS FROM PRINCIPAL COUNTRIES, BY MONTHS, ALL KINDS COMBINED

Table 22 shows the total imports of pulp by months from each of the important pulp-producing countries.

According to this table, there was much greater irregularity in the movement of imports than appears from the quarterly data. The most conspicuous recent changes are the marked increase in imports from April to June, 1930, the marked increase again from April to June, 1931, the marked increase in November, 1930, and again in November, 1931, the sharp decline in December, 1931, the exceptionally large figures in January and February, 1932 (the imports in January being the largest with the exception of February, 1930, recorded during any month covered by the table), and the very great decline during March, 1932.

TABLE 22.—Wood pulp: Imports from principal countries (all kinds combined), by months

[Tons of 2,000 pounds]

Period	Total, all countries	Canada	All other countries				
			Total	Sweden	Finland	Norway	Other
1929							
January.....	177,072	68,110	108,962				
February.....	132,475	52,205	80,270				
March.....	101,554	60,322	41,232				
April.....	147,070	65,909	81,161				
May.....	140,793	69,972	70,821				
June.....	178,465	65,670	112,795				
July.....	179,909	65,157	114,752				
August.....	167,233	73,009	94,224				
September.....	155,200	67,810	87,390				
October.....	172,898	77,727	95,171				
November.....	165,400	65,915	99,485				
December.....	169,436	70,514	98,922				
Total, 1929.....	1,887,506	802,320	1,085,185				
1930							
January.....	199,845	71,675	128,170	100,639	11,658	8,625	7,848
February.....	217,851	70,280	147,571	99,214	20,828	16,127	11,402
March.....	129,105	70,629	58,476	21,854	15,067	8,669	12,866
April.....	113,086	60,273	52,815	22,811	12,777	8,714	8,513
May.....	117,851	53,923	63,923	35,747	13,383	8,216	6,572
June.....	147,192	55,806	91,386	60,098	15,854	8,410	6,124
July.....	127,420	53,934	73,486	47,833	11,425	7,140	7,688
August.....	148,140	55,185	92,955	64,041	15,513	5,145	8,256
September.....	145,000	63,370	81,630	55,114	10,331	8,048	8,137
October.....	141,058	66,651	74,407	48,269	11,401	5,221	9,516
November.....	173,481	58,456	115,025	84,530	19,719	4,264	6,512
December.....	172,154	57,728	114,426	82,442	16,241	6,452	9,291
Total, 1930.....	1,832,185	737,915	1,094,270	723,492	174,222	94,431	102,125
1931							
January.....	182,180	38,994	143,186	116,993	13,281	5,957	6,955
February.....	128,688	47,440	81,248	63,125	6,779	4,188	7,156
March.....	96,309	50,063	46,246	12,969	13,769	8,421	11,067
April.....	100,649	55,929	44,720	13,174	16,516	3,876	11,154
May.....	88,449	41,447	47,002	26,287	12,603	918	7,194
June.....	127,450	43,665	83,791	53,816	20,857	553	8,565
July.....	137,795	38,877	98,918	67,667	13,659	2,144	10,445
August.....	131,414	40,180	91,234	66,390	12,144	728	11,972
September.....	139,035	45,282	93,753	62,687	18,645	1,353	11,168
October.....	137,020	52,263	84,757	53,613	14,559	3,658	12,927
November.....	183,123	52,399	130,724	92,683	32,325	5,716	.....
December.....	135,437	43,422	92,015	63,031	13,830	5,755	9,399
Total, 1931.....	1,587,555	549,961	1,037,594	692,335	193,967	43,267	108,025
1932							
January.....	211,292	36,338	175,054	139,667	17,948	6,164	11,275
February.....	191,071	41,499	149,572	113,333	15,805	8,910	11,524
March.....	101,537	38,839	62,698	24,921	17,603	12,195	7,979

Preliminary.

The exceptionally large figures during January and February, 1932, and the exceptionally small figures during March were largely attributable to changes in the imports from Sweden, which increased over 100 per cent from December to January but were less than one-fifth as large in March as in January. The great decline in imports in March, 1932, was not abnormal, similar declines having appeared in 1931 and 1930. In all three of these years stocks of pulp were built up during the winter months and subsequently drawn upon. The stocks of imported wood pulp held in warehouses at the principal ports (as reported to the Tariff Commission by importers and railway companies) on February 1, 1932, were more than double

those for July 1, 1931, and about 50 per cent greater than on January 1, 1932.

It may be noted that during the winter of 1931-32 negotiations looking toward the adjustment of labor conditions in the Swedish pulp industry had been going on and in April a general strike took place.

Attention is also called to the irregular movements of the imports of chemical pulp from Finland and from Norway. The largest importations from Finland during any month since 1929 occurred in November, 1931; it is impossible to determine whether the large figure was due to the depreciated currency or represented deliveries on contracts made before depreciation set in. The imports from Finland since November have been much smaller than during that month. There has been a steady increase in imports of chemical pulp from Norway since August, 1931, but the totals are relatively small.

IMPORTS OF CHEMICAL AND MECHANICAL PULP FROM PRINCIPAL COUNTRIES, BY MONTHS

Table 23 shows the imports of wood pulp from each of the principal countries, distinguishing chemical pulp and mechanical pulp.

TABLE 23.—Wood pulp: Imports of chemical and of mechanically ground wood pulp, from principal countries, by months

Source: Compiled from monthly import statistics. Aggregates of monthly totals vary slightly from total annual imports]

[Tons of 2,000 pounds]

Period	Chemical pulp					Mechanically ground wood	
	Canada	All other countries				Canada	Other
		Total	Sweden	Finland	Norway			Other
1929							
January.....	45,100	106,036				23,010	2,926
February.....	38,931	79,315				13,274	955
March.....	46,545	36,483				13,777	2,749
April.....	43,924	79,684				21,985	1,477
May.....	51,072	68,680				18,900	2,241
June.....	43,923	110,503				21,747	2,292
July.....	47,980	112,920				17,177	1,632
August.....	49,381	93,083				23,628	1,141
September.....	47,829	86,662				19,981	728
October.....	52,481	93,243				25,246	1,928
November.....	46,088	97,871				19,827	1,614
December.....	46,006	87,244				24,508	11,678
Total, 1929.....	559,260	1,053,624				243,060	31,561
1930							
January.....	46,351	125,071	100,381	9,843	6,999	7,848	3,060
February.....	46,058	132,687	92,020	19,736	9,530	11,401	14,884
March.....	48,123	53,922	20,736	14,392	5,928	12,866	4,554
April.....	41,665	60,789	22,331	11,465	8,490	8,513	2,026
May.....	38,382	62,080	35,598	12,141	7,768	6,573	1,843
June.....	39,959	86,699	60,496	14,511	8,157	5,535	2,687
July.....	38,708	71,626	46,556	10,960	6,902	7,068	1,960
August.....	36,633	90,246	63,531	14,265	4,193	3,257	2,709
September.....	36,837	76,605	53,525	10,275	7,096	7,709	3,026
October.....	37,592	72,161	47,969	9,979	4,679	9,514	2,246
November.....	39,856	111,849	84,045	17,280	4,012	6,512	3,176
December.....	33,319	111,811	82,271	14,877	5,378	9,290	2,615
Total, 1930.....	482,483	1,040,446	709,479	159,784	79,137	101,166	44,824

TABLE 23.—*Wood pulp: Imports of chemical and of mechanically ground wood pulp, from principal countries, by months—Continued*

(Source: Compiled from monthly import statistics. Aggregates of monthly totals vary slightly from total annual imports)

(Tons of 2,000 pounds)

Period	Chemical pulp					Mechanically ground wood		
	Canada	All other countries				Canada	Other	
		Total	Sweden	Finland	Norway			Other
1931								
January.....	27,905	139,881	115,706	11,487	5,733	6,955	11,089	3,305
February.....	33,170	79,862	63,125	5,644	3,936	7,167	14,270	1,386
March.....	36,696	44,961	12,732	12,834	8,309	11,086	13,367	1,285
April.....	34,550	42,963	12,869	15,465	3,484	11,155	21,379	1,767
May.....	30,414	45,184	26,024	11,659	308	7,193	11,033	1,818
June.....	31,983	81,961	52,763	20,556	77	8,565	11,682	1,830
July.....	26,334	93,736	65,696	16,670	922	10,448	12,543	5,182
August.....	27,636	89,378	65,850	11,080	476	11,972	12,544	1,856
September.....	28,697	91,673	61,911	18,148	447	11,167	16,585	2,080
October.....	32,412	82,766	52,459	14,169	3,210	12,928	19,851	1,991
November.....	34,311	127,746	91,928	30,564	5,254	-----	18,088	2,978
December.....	24,816	87,864	60,997	13,264	4,346	9,257	18,606	4,151
Total, 1931.....	368,924	1,007,975	682,060	181,630	36,502	107,883	181,037	29,619
1932 ¹								
January.....	21,320	172,634	138,776	16,961	5,643	11,254	14,918	2,420
February.....	27,651	144,293	112,072	12,611	8,086	11,524	13,848	5,279
March.....	28,016	61,086	24,319	17,088	11,699	7,980	10,823	1,612

¹ Preliminary.

PRODUCTION AND SHIPMENTS BY DOMESTIC PULP MILLS AND RECEIPTS OF PAPER MILLS—ALL KINDS OF PULP COMBINED

PRODUCTION AND SHIPMENTS BY DOMESTIC PULP MILLS

The commission obtained reports from a large number of domestic pulp mills covering their production and shipments of pulp during each month beginning with January, 1929. These reports covered about 60 per cent of the total production of pulp, a proportion sufficiently large to indicate the probability that the monthly movements of production shown for the reporting mills are representative for all mills.

Table 24 shows by quarters from 1929 to 1931 the monthly average production by the pulp mills reporting to the Tariff Commission and their shipments to domestic paper mills, distinguishing those affiliated from those unaffiliated with the given shipping pulp mill. It will be seen from this table that the plants reporting to the Tariff Commission during most quarters shipped only one-eighth or one-tenth of their total output to paper mills unaffiliated with themselves. This proportion is decidedly lower than that shown for the pulp mills as a whole in their reports to the Bureau of the Census covering 1929, indicating that the mills reporting to the Tariff Commission were not representative of the entire industry in this respect. Nevertheless it is probable that the changes in the shipments of the reporting plants to unaffiliated paper mills are fairly parallel with the changes in the total shipments of all pulp producers to unaffiliated paper mills.

It will be seen that the combined shipments to affiliated and unaffiliated domestic mills during each quarter were very nearly the same as the production of that quarter, the slight variations being due to the fact that certain mills export small quantities of pulp and that some of the mills carry stocks which vary more or less from time to time. For the most part, however, domestic shipments are closely parallel with total production.

The table shows that domestic production of reporting mills held up well until the second quarter of 1930. In the third quarter there was a sharp drop after which production remained more or less stationary until the second quarter of 1931, after which, again, there was a sharp drop. The average monthly production in the fourth quarter of 1931, after depreciation had set in in the foreign pulp-producing countries, was about 2,800 tons less than in the preceding quarter, a decline of about 1½ per cent. The decline in the third quarter of each of the three years shown is apparently partly due to seasonal causes.

TABLE 24.—Wood pulp: Production and shipments by domestic pulp mills reporting to the Tariff Commission, by monthly averages, by quarters

[Monthly averages]

Year and quarter	Quantity in tons of 2,000 pounds			Relative to 1930 as 100			Proportion of domestic shipments to unaffiliated mills
	Production	Domestic shipments to—		Production	Shipments to—		
		Affiliated mills	Unaffiliated mills		Affiliated mills	Unaffiliated mills	
1929							
January-March.....	239,069	207,173	25,433	101	102	100	<i>Per cent</i> 10.9
April-June.....	258,841	221,574	29,575	110	109	117	11.8
July-September.....	228,849	196,917	27,653	97	97	109	12.3
October-December.....	232,456	195,893	28,518	98	96	113	12.7
1930							
January-March.....	248,964	211,108	29,366	106	104	116	12.2
April-June.....	258,625	224,148	25,488	110	110	101	10.2
July-September.....	218,803	190,200	22,589	93	93	89	10.6
October-December.....	217,758	188,218	23,857	92	92	94	11.2
1931							
January-March.....	218,840	191,097	27,345	93	94	108	12.5
April-June.....	228,807	194,265	26,963	97	95	106	12.2
July-September.....	202,540	174,064	25,814	86	86	102	12.9
October-December.....	199,700	170,558	20,647	85	84	82	10.8

The relatively small totals for shipments from pulp mills to unaffiliated paper mills show much greater variation than the total production. These shipments to unaffiliated mills were well maintained until the first quarter of 1930. They dropped in the second quarter and again in the third quarter, after which they increased and then remained more or less stationary until the fourth quarter of 1931. The shipments to unaffiliated mills in the last quarter of 1931 were about 5,200 tons less per month than in the preceding quarter, a decline of about 20 per cent. The decline in the amount of shipments to affiliated mills between the third and the fourth quarter was 3,500 tons, or only about 2 per cent. As the result of this difference in the shipments to the two classes of mills, the proportion of the total shipments going to unaffiliated mills fell from 13 per cent in the third quarter of 1931 to 11 per cent in the fourth quarter.

COMPARISON OF SHIPMENTS BY PULP MILLS TO UNAFFILIATED PAPER MILLS AND RECEIPTS OF PAPER MILLS FROM UNAFFILIATED PULP MILLS

If it had been possible for the commission to obtain reports from all domestic pulp mills and all domestic paper mills, there would doubtless have been close harmony between the reports of the pulp mills concerning shipments to unaffiliated paper mills and the reports of the paper mills concerning receipts from unaffiliated pulp mills. But as the reports received were in neither case complete, it was not to be expected that the two sets of figures would agree in amount for any one period of time. If, however, the samples were sufficiently complete the relative changes in the two sets of figures from month to month and from quarter to quarter should be substantially parallel. Table 25 presents a comparison of the two sets of returns, namely, the reported shipments by pulp mills to unaffiliated paper mills in the United States and the reported receipts of domestic pulp by paper mills from unaffiliated pulp mills.

TABLE 25.—*Comparison of domestic shipments by pulp mills reporting to the Tariff Commission with receipts of paper mills reporting, monthly averages, by quarters*

[Tons of 2,000 pounds]

Year and quarter	Shipments by pulp mills to unaffiliated paper mills	Receipts of paper mills from unaffiliated pulp mills	Year and quarter	Shipments by pulp mills to unaffiliated paper mills	Receipts of paper mills from unaffiliated pulp mills
1929			1930		
January-March.....	25, 433	18, 720	July-September.....	22, 589	13, 220
April-June.....	29, 575	19, 237	October-December.....	23, 857	13, 812
July-September.....	27, 653	19, 420	1931		
October-December.....	28, 518	19, 052	January-March.....	27, 345	17, 618
1930			April-June.....	26, 963	17, 195
January-March.....	29, 366	18, 403	July-September.....	25, 814	14, 338
April-June.....	25, 488	16, 568	October-December.....	20, 647	14, 225

This table shows a rough parallelism of movement over the period of three years taken as a whole; but some rather considerable disparities appear. Both sets of data indicate a marked decline during the early part of 1930, but the first two quarters of 1931 as compared with the last quarter of 1930 show a considerable increase. The decline in the receipts by paper mills from unaffiliated pulp plants during the third quarter of 1931 as compared with the second quarter was much greater than the decline reported by pulp mills in their shipments to unaffiliated paper mills. Precisely the reverse, however, appears in the comparison between the fourth quarter of 1931 and the third quarter. The paper mills reported the receipt of practically the same quantities of pulp from unaffiliated domestic pulp mills during the fourth quarter as during the third quarter of 1931.

PRODUCTION BY DOMESTIC PULP MILLS COMPARED WITH IMPORTS

Table 26 shows, by quarters, the total production of wood pulp by domestic mills reporting to the Tariff Commission, distinguishing chemical from mechanical pulp, in comparison with the total imports. The production includes both that for self-consumption in the same or affiliated plants and that for sale. As shown in a subsequent

table, very nearly all of the mechanical pulp produced is for self-consumption. The data for total imports and total production reporting to the commission are also shown in Chart H. The absolute figures of domestic production in this table for a given period should not be compared with the absolute figures of imports, since the import data are complete, whereas the domestic production data represent only mills reporting to the commission. The movement of production and imports as revealed in the relative numbers is comparable.

CHART H

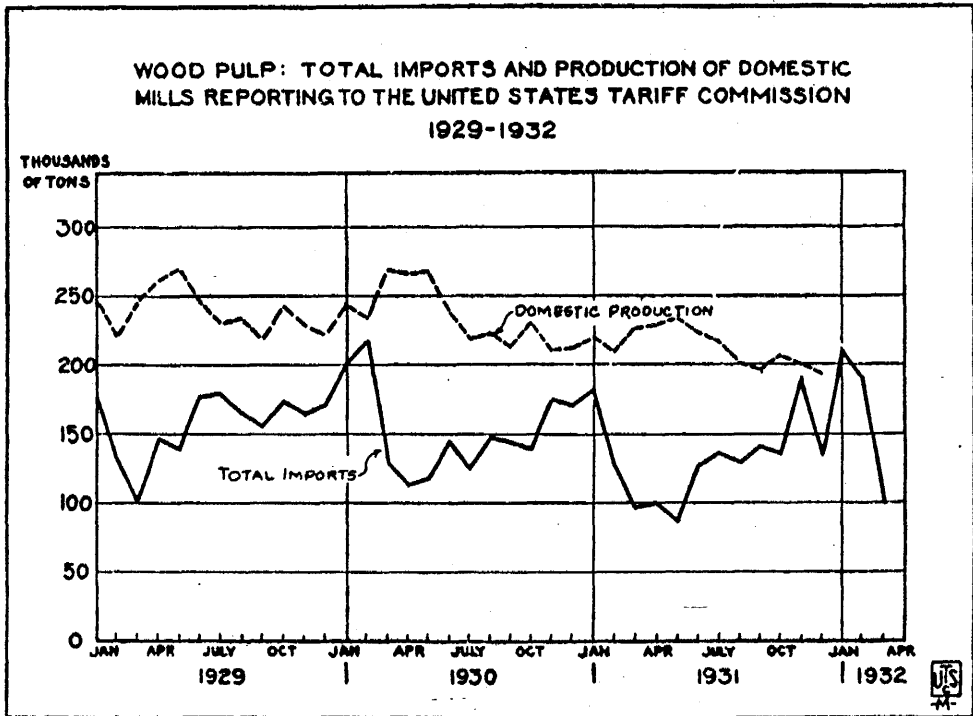


TABLE 26.—Comparison of production of domestic pulp mills reporting to the Tariff Commission with imports of wood pulp, monthly averages, by quarters
[Tons of 2,000 pounds]

Year and quarter	Total				Chemical		Mechanical	
	Tons		Relative to 1930 as 100		Production	Imports	Production	Imports
	Production	Imports	Production	Imports				
1929								
January-March.....	239,069	137,034	101	90	148,346	118,137	90,723	18,897
April-June.....	258,841	155,443	110	102	157,329	132,562	101,512	22,881
July-September.....	228,849	167,447	97	110	154,713	145,952	74,136	21,495
October-December.....	232,456	169,244	98	111	156,589	140,978	75,667	28,266
1930								
January-March.....	248,964	182,266	106	119	160,055	150,737	88,909	31,530
April-June.....	258,625	126,044	110	83	157,297	107,191	101,328	18,852
July-September.....	218,903	140,187	93	92	148,813	117,519	69,990	22,668
October-December.....	217,758	162,231	92	106	144,537	135,529	73,221	26,702
1931								
January-March.....	218,840	138,726	93	89	139,190	120,826	79,660	14,901
April-June.....	228,807	108,518	97	69	148,263	89,018	85,544	10,500
July-September.....	202,540	136,061	86	89	135,190	119,151	67,360	16,930
October-December.....	199,700	151,860	85	99	125,222	129,972	74,478	21,888
1932 ¹								
January-March.....	.....	167,967	.....	110	.....	151,667	.....	16,300

¹ Preliminary.

The table shows, after allowing for seasonal changes, a general downward trend in domestic production after the second quarter of 1930, in contrast with a much more variable movement of imports. The significance of the increase in imports during the last quarter of 1931 and the first quarter of 1932, in its relation to currency depreciation, has already been discussed.

The movement of the domestic production of mechanical pulp reported by pulp mills to the Tariff Commission has been rather widely different from that of chemical pulp during each of the years covered by the table. In 1931 the third quarter showed a much more marked decrease as compared with the second quarter in the case of mechanical than of chemical pulp, but in the fourth quarter there was an increase in mechanical against a decrease in chemical. The changes in the imports of chemical pulp are more significant than those in the imports of mechanical pulp, because much the greater part of the total importation is of the chemical variety. Here, again, wide disparity appears as between the movements of imports of the two kinds of pulp.

Table 27 affords a comparison of the monthly figures of imports with production of domestic mills reporting to the Tariff Commission for all wood pulp combined and for chemical and mechanical pulp separately.

TABLE 27.—Comparison of production of pulp by domestic pulp mills reporting to the Tariff Commission with imports, by months

[Tons of 2,000 pounds]

Period	Total		Chemical		Mechanical	
	Production	Imports	Production	Imports	Production	Imports
1929						
January.....	247,098	177,072	162,850	151,136	94,248	25,936
February.....	222,801	132,476	139,933	118,246	82,868	14,229
March.....	247,307	101,554	152,254	85,028	95,053	16,526
April.....	261,164	147,070	156,595	123,608	104,569	23,462
May.....	269,019	140,793	163,017	119,652	106,002	21,141
June.....	246,341	178,465	152,376	154,426	93,965	24,039
July.....	232,460	179,909	152,897	160,900	79,563	19,009
August.....	235,706	167,233	161,100	142,484	74,606	24,789
September.....	218,380	155,200	150,142	134,491	68,238	20,709
October.....	243,209	172,898	166,958	145,724	76,251	27,174
November.....	231,003	165,400	157,056	143,959	73,947	21,441
December.....	223,158	169,436	145,752	133,250	77,406	36,186
1930						
January.....	244,025	199,845	160,997	171,422	83,028	28,423
February.....	234,549	217,851	151,792	178,745	82,757	39,106
March.....	268,317	129,105	167,377	102,045	100,940	27,060
April.....	267,042	113,088	162,903	92,454	104,139	20,634
May.....	268,233	117,851	162,018	100,462	106,215	17,389
June.....	240,599	147,192	146,970	128,658	93,629	18,534
July.....	219,428	127,420	145,408	110,234	74,020	17,186
August.....	223,019	148,140	153,395	126,879	69,624	21,261
September.....	213,963	145,000	147,638	115,442	66,325	29,558
October.....	230,715	141,058	160,859	109,753	69,856	31,305
November.....	210,857	173,481	139,384	151,705	71,473	21,776
December.....	211,704	172,184	133,365	145,130	78,339	27,024
1931						
January.....	219,641	182,180	138,075	167,786	81,866	14,394
February.....	208,739	128,688	135,558	113,032	73,181	15,656
March.....	227,840	96,309	143,907	81,657	83,933	14,652
April.....	228,668	100,649	141,277	77,513	87,391	23,136
May.....	233,804	88,449	145,425	75,598	88,379	12,851
June.....	223,947	127,456	143,086	113,944	80,861	13,512
July.....	211,035	137,795	140,108	120,070	70,927	17,725
August.....	200,816	131,414	136,457	117,014	64,359	14,400
September.....	195,769	139,035	128,975	120,370	66,391	18,665
October.....	206,115	137,020	133,567	115,178	72,548	21,842
November.....	199,904	183,123	123,241	162,057	76,663	21,066
December.....	193,063	135,437	118,859	112,680	74,224	22,757
1932 ¹						
January.....	-----	211,292	-----	193,954	-----	17,338
February.....	-----	191,071	-----	171,944	-----	19,127
March.....	-----	101,537	-----	89,102	-----	12,435

¹ Preliminary.

SHIPMENTS BY DOMESTIC PULP MILLS TO AFFILIATED AND UNAFFILIATED PAPER MILLS COMPARED WITH IMPORTS

It has been shown in Table 24 that the movement of the shipments of domestic plants to unaffiliated paper mills has been somewhat different from that of their shipments to affiliated mills, the proportion going to unaffiliated mills having declined, on the whole, throughout the 3-year period and having declined sharply during the last quarter of 1931. Consequently the relation between the movement of imports and the movement of domestic shipments is different when shipments to the two classes of mills are considered separately. Table 28 shows the comparative data. The most noteworthy features of this table are the marked decline in the shipments of pulp mills to unaffiliated paper mills during the fourth quarter of 1931 and the increase in imports during both the third and fourth quarters. The decline in the shipments to affiliated plants from the second to the fourth quarter was less marked.

TABLE 28.—Comparison of shipments of pulp to unaffiliated domestic paper mills by pulp mills reporting to the Tariff Commission, with imports, monthly averages, by quarters

Year and quarter	Quantity in tons of 2,000 pounds			Relative to 1930 as 100		
	Shipments to—		Total imports	Shipments to—		Total imports
	Affiliated paper mills	Unaffiliated paper mills		Affiliated paper mills	Unaffiliated paper mills	
1929						
January-March.....	207, 173	25, 433	137, 034	102	100	90
April-June.....	221, 574	29, 575	155, 443	109	117	102
July-September.....	196, 917	27, 653	167, 447	97	109	110
October-December.....	193, 893	28, 518	169, 244	96	113	111
1930						
January-March.....	211, 108	29, 366	182, 266	104	116	119
April-June.....	224, 148	25, 468	126, 044	110	101	83
July-September.....	190, 200	22, 559	140, 187	93	89	92
October-December.....	188, 218	23, 887	162, 231	92	94	106
1931						
January-March.....	191, 097	27, 345	135, 726	94	108	89
April-June.....	194, 265	26, 963	105, 518	95	106	69
July-September.....	174, 054	25, 814	136, 061	86	102	89
October-December.....	170, 558	20, 647	151, 860	84	82	99
1932 ¹						
January-March.....			167, 967			110

¹ Preliminary.

RECEIPTS OF PULP BY PAPER MILLS, BY SOURCES

In order to obtain as full information as possible concerning the consumption of imported wood pulp in the United States, the Tariff Commission addressed its questionnaires for paper mills chiefly to mills which were known to purchase a large part of their pulp either from unaffiliated domestic pulp mills or from foreign sources. In other words, the so-called converting paper mills were much more fully represented in the compilation than the so-called integrated paper mills. Consequently the proportions of pulp received from the

different sources by the mills reporting to the Tariff Commission are by no means representative of the corresponding proportions for all paper mills in the country. The resulting statistics are, however, significant as showing the changes during recent years in the sources of pulp consumed by the reporting mills.

Table 29 shows, by quarters, for 1929 to 1931, the average monthly receipts of pulp by paper mills reporting to the Tariff Commission from (a) domestic pulp mills affiliated with the reporting paper mills, (b) unaffiliated domestic pulp mills, (c) affiliated foreign pulp mills (a minor item), and (d) other foreign sources. For ready comparison of the movements of the pulp received from these different sources, relative numbers based on the monthly average for 1930 are included in the table. Table 30 shows by percentages the distribution of the receipts from these four sources; although, as above stated, the percentages for a given quarter are not representative of the sources of total pulp consumption in the United States, the changes in them from quarter to quarter are significant.

TABLE 29.—Receipts of pulp by paper mills reporting to the Tariff Commission from specified sources, monthly averages by quarters

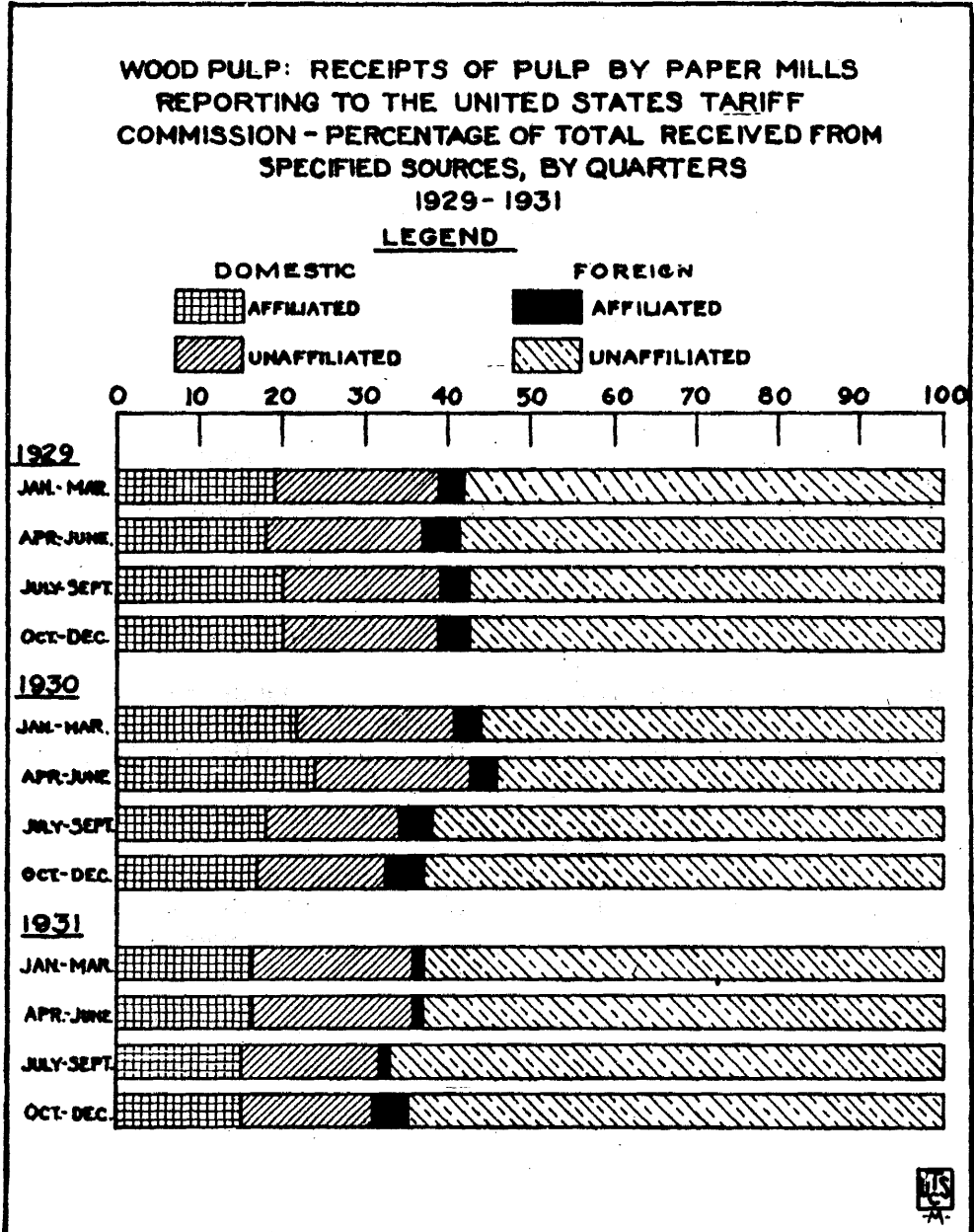
[Quantities in tons of 2,000 pounds]

Year and quarter	Quantity received, monthly average				Relative to monthly average, 1930 (per cent)				
	Total	From domestic pulp mills		From foreign sources		From domestic mills		From foreign sources	
		Affiliated	Unaffiliated	Affiliated	Unaffiliated	Affiliated	Unaffiliated	Affiliated	Unaffiliated
1929									
January-March.....	93,160	17,638	18,720	2,811	53,991	98.7	120.77	84.6	104.0
April-June.....	101,168	17,919	19,237	4,533	59,479	100.3	124.10	136.4	114.6
July-September.....	100,748	20,379	19,420	3,017	57,932	114.1	125.28	90.8	111.6
October-December.....	101,194	20,417	19,052	3,851	57,874	114.3	122.91	115.8	111.5
1930									
January-March.....	96,583	20,956	18,403	3,275	53,949	117.3	118.7	98.5	103.9
April-June.....	88,240	21,059	16,568	2,867	47,746	117.9	106.9	86.3	92.0
July-September.....	81,313	14,651	13,220	3,068	50,374	82.0	85.3	92.3	97.0
October-December.....	88,289	14,807	13,812	4,087	55,583	82.9	89.1	122.9	107.1
1931									
January-March.....	90,165	14,717	17,618	1,267	56,563	82.4	113.7	38.1	109.0
April-June.....	88,415	14,492	17,195	800	55,928	81.1	110.9	24.1	107.7
July-September.....	84,987	12,655	14,338	746	57,248	70.8	92.5	22.4	110.3
October-December.....	90,406	13,719	14,225	3,636	58,826	76.8	91.8	109.4	113.3

From the beginning of 1929 until the middle of 1930 the reporting paper mills were taking a decreasing percentage of their pulp from foreign sources and a rising proportion from affiliated domestic mills. A marked increase in the proportion from foreign sources took place during the latter half of 1930, after which there was little change until the third quarter of 1931, before depreciation in foreign countries had set in, when the proportion from foreign sources rose (from 64.2 per cent in the second quarter to 68.3 per cent in the third). The proportion from foreign sources was still higher in the last quarter of 1931, 69.1 per cent, but the change was less marked than in the third quarter.

The paper mills of the United States, all taken together, receive much more pulp from affiliated domestic pulp mills than from unaffiliated, but for the mills reporting to the Tariff Commission the receipts from the two sources have been approximately equal throughout the last three years. Table 30 shows that receipts from unaffil-

CHART I



iated domestic pulp mills declined, in relation to the total receipts of domestic and foreign pulp, during the second half of 1930, rose again during the first half of 1931, and, in conformity with the increasing proportion of foreign stock used, declined rather sharply in the third quarter of 1931 and declined somewhat further in the fourth quarter.

TABLE 30.—Receipts of pulp by paper mills reporting to the Tariff Commission—percentage of total received from specified sources, by quarters

Year and quarter	Per cent of total from—			
	Domestic pulp mills		Foreign sources	
	Affiliated	Unaffiliated	Affiliated	Unaffiliated
1929				
January-March.....	18.9	20.1	3.0	58.0
April-June.....	17.7	19.0	4.5	58.8
July-September.....	20.2	19.3	3.0	57.5
October-December.....	20.2	18.8	3.8	57.2
1930				
January-March.....	21.7	19.0	3.4	55.9
April-June.....	23.9	18.8	3.2	54.1
July-September.....	18.0	16.3	3.8	61.0
October-December.....	16.8	15.6	4.6	63.0
1931				
January-March.....	16.3	19.5	1.4	62.7
April-June.....	16.4	19.4	.9	63.3
July-September.....	14.9	16.9	.9	67.4
October-December.....	15.2	15.7	4.0	65.1

SUMMARY COMPARISON OF PRODUCTION, SHIPMENTS, RECEIPTS OF PAPER MILLS, IMPORTS, AND CONTRACTS FOR IMPORTED PULP

The preceding tables have presented a number of separate tabulations and comparisons relating to the production and shipments by pulp mills reporting to the Tariff Commission, the receipts of pulp by paper mills reporting to the commission, the imports and the contracts made by European importers. For convenience the relative numbers representing these various series of statistics, based on the monthly average of 1930 taken as 100, are presented by quarters in Table 31 and are illustrated by Chart J. In considering the relatives for the last two quarters, since depreciation of the currency in foreign countries set in, the fact that the data in certain columns are much affected by seasonal causes should be borne in mind, and trends apparent before the period of depreciation should also be noted.

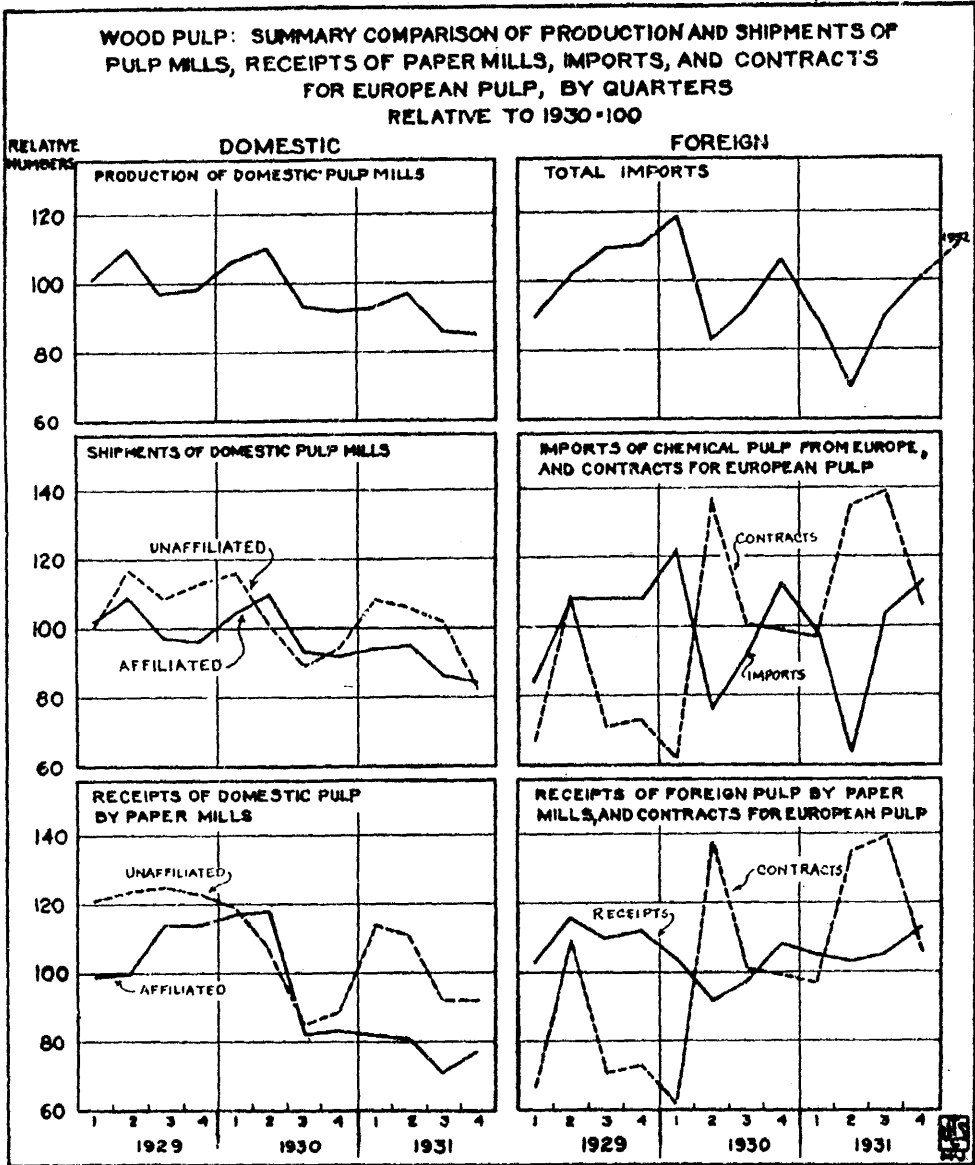
TABLE 31.—Wood pulp: Summary comparison of relatives showing production and shipments by reporting domestic pulp mills, receipts of reporting domestic paper mills, imports, and contracts placed by importers, by quarters

[Relative to monthly average, 1930 as 100]

Year and quarter	Production and shipments by pulp mills reporting to Tariff Commission			Receipts of pulp by paper mills reporting to Tariff Commission				Imports				Contracts made by European importers
	Production	Shipments (domestic)		Total	Domestic pulp		Foreign pulp	Total		Total chemical	Total mechanical	
		To affiliated plants	To unaffiliated plants		From affiliated plants	From unaffiliated plants		From all countries	From Europe			
1929												
First.....	101	102	100	105	99	121	103	90	84	92	76	67
Second.....	110	109	117	114	100	124	116	102	97	104	92	109
Third.....	97	97	109	114	114	125	110	110	108	114	86	71
Fourth.....	98	96	113	114	114	123	112	111	107½	110	113	73
1930												
First.....	106	104	116	109	117	119	104	119	122	118	126	62
Second.....	110	110	101	100	118	107	92	83	76	84	76	137
Third.....	98	93	89	92	82	85	97	92	91	92	91	101
Fourth.....	92	92	94	100	83	89	108	108	112	106	107	99
1931												
First.....	93	94	108	102	82	114	105	89	99	95	60	97
Second.....	97	95	106	100	81	111	103	69	64	69	66	135
Third.....	86	86	102	96	71	92	105	89	104	94	68	139
Fourth.....	85	84	82	102	77	92	113	99	113	102	88	106
1932¹												
First.....								110	142	119	65	

¹ Preliminary.

CHART J



IMPORTS OF PULP AND CONTRACTS FOR EUROPEAN PULP, BY KINDS

IMPORTS OF PRINCIPAL KINDS OF PULP FROM PRINCIPAL COUNTRIES

In preceding tables there has been brought out the relation between the imports and the domestic production and consumption of wood pulp of all kinds combined and of the two major classes, chemical and mechanical. The following group of tables relates to the principal individual kinds of pulp. Unbleached sulphite, bleached sulphite, unbleached sulphate, and unbleached ground wood are important both in domestic production and in imports, and in addition there is a considerable domestic production but very little importation of soda pulp.

Although the several kinds of pulp differ somewhat in their uses and are not strictly interchangeable, there is such a degree of interchangeability among them that the production of the several kinds can not be considered as separate industries, for each of which the competition between the domestic and the foreign product should be considered as a separate problem. In other words, there would be little significance in comparing for a given kind of pulp, such as unbleached sulphite, the changes in domestic production or in the purchases of paper mills from domestic pulp mills with the imports, the contracts for imported pulp, or the receipts of foreign pulp by the paper mills. The details regarding the several kinds of pulp are therefore presented in tables dealing with imports, production, and receipts of paper mills.

The monthly figures of imports of the several kinds of wood pulp are shown in Charts K to N and in tables in the appendix.

Table 32 shows by quarters beginning with 1930 the imports of the four principal kinds of wood pulp from the principal individual countries. The most important class in respect to quantity of imports is unbleached sulphite, of which Sweden is by far the largest supplier, followed by Canada and Finland. The imports show very marked variations, especially in the receipts from the two European countries named. A conspicuous peak appeared in the last quarter of 1930 and again in the last quarter of 1931, and a very marked decline (brought out in Table 103 in the appendix) occurred in March, 1932.

The imports of bleached sulphite have been much less variable; these come chiefly from Canada. Unbleached sulphate, which ranks next to unbleached sulphite in total tonnage, and which also comes chiefly from European countries, shows, on the other hand, very marked variations, with a peak in the latter part of 1930 and a still higher peak in the latter part of 1931 and in January and February, 1932. Because of the large imports both from Sweden and Finland, the highest total was in November, 1931. The decline in March, 1932, was similar to that in unbleached sulphite. The imports of unbleached ground wood, the great bulk of which comes from Canada, with much smaller quantities from Finland, show a generally declining trend during 1931 and 1932 though there was an increase apparently chiefly due to seasonal causes, in the fourth quarter of 1931 as compared with the third quarter.

TABLE 32—Wood pulp: Imports of principal kinds from leading pulp-producing countries, monthly averages, by quarters

[In tons of 2,000 pounds]

Year and quarter	Total	Sweden	Canada	Finland	Germany
Sulphite, unbleached					
1930					
January-March.....	76, 119	41, 844	18, 977	9, 646	(1)
April-June.....	51, 184	20, 617	16, 586	8, 049	(1)
July-September.....	56, 274	29, 373	14, 427	8, 778	(1)
October-December.....	64, 335	35, 553	13, 643	10, 809	(1)
1931					
January-March.....	57, 636	34, 472	11, 019	7, 779	(1)
April-June.....	38, 285	15, 286	9, 115	9, 930	(1)
July-September.....	50, 236	30, 413	6, 644	7, 652	(1)
October-December.....	53, 954	32, 083	6, 301	10, 997	(1)
1932					
January-March.....	69, 850	49, 545	5, 690	8, 421	(1)
Sulphite, bleached					
1930					
January-March.....	32, 712	3, 186	18, 766	(1)	6, 360
April-June.....	28, 900	4, 548	15, 915	(1)	2, 603
July-September.....	28, 549	3, 537	16, 348	(1)	4, 292
October-December.....	30, 383	5, 301	16, 606	(1)	3, 954
1931					
January-March.....	31, 517	6, 963	15, 007	(1)	4, 636
April-June.....	29, 523	3, 995	18, 413	(1)	4, 627
July-September.....	28, 186	3, 709	17, 238	(1)	4, 813
October-December.....	28, 789	3, 650	18, 422	(1)	3, 529
1932					
January-March.....	35, 032	7, 184	15, 881	(1)	4, 218
Sulphate, unbleached					
1930					
January-March.....	40, 498	25, 949	8, 258	4, 441	(1)
April-June.....	24, 822	13, 564	6, 270	3, 234	(1)
July-September.....	30, 754	21, 609	5, 274	2, 560	(1)
October-December.....	37, 345	29, 472	4, 523	2, 174	(1)
1931					
January-March.....	26, 595	20, 051	4, 004	1, 473	(1)
April-June.....	18, 613	11, 143	2, 715	4, 677	(1)
July-September.....	38, 985	30, 269	2, 184	6, 300	(1)
October-December.....	44, 426	32, 701	3, 124	7, 586	(1)
1932					
January-March.....	44, 050	34, 908	1, 652	5, 662	(1)
Mechanically ground, unbleached					
1930					
January-March.....	27, 677	(1)	24, 017	1, 048	(1)
April-June.....	18, 416	(1)	16, 648	1, 153	(1)
July-September.....	21, 841	(1)	20, 104	354	(1)
October-December.....	25, 885	(1)	24, 022	1, 387	(1)
1931					
January-March.....	14, 072	(1)	12, 909	710	(1)
April-June.....	15, 600	(1)	14, 687	432	(1)
July-September.....	15, 611	(1)	13, 891	873	(1)
October-December.....	20, 504	(1)	18, 849	850	(1)
1932 ¹					
January-March.....	15, 534	(1)	13, 196	1, 407	(1)

¹ Not important.² Preliminary.

CHART K

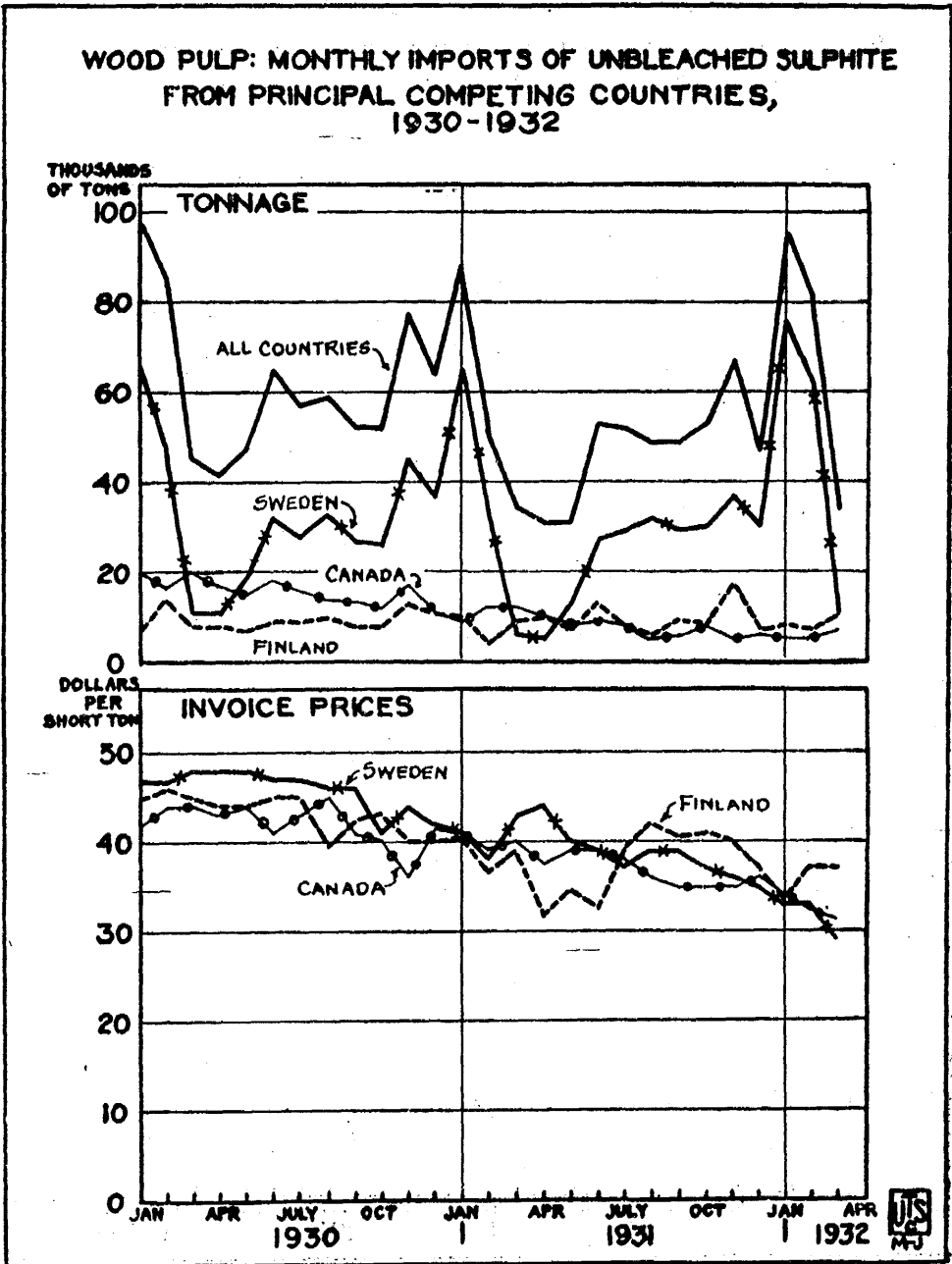


CHART L

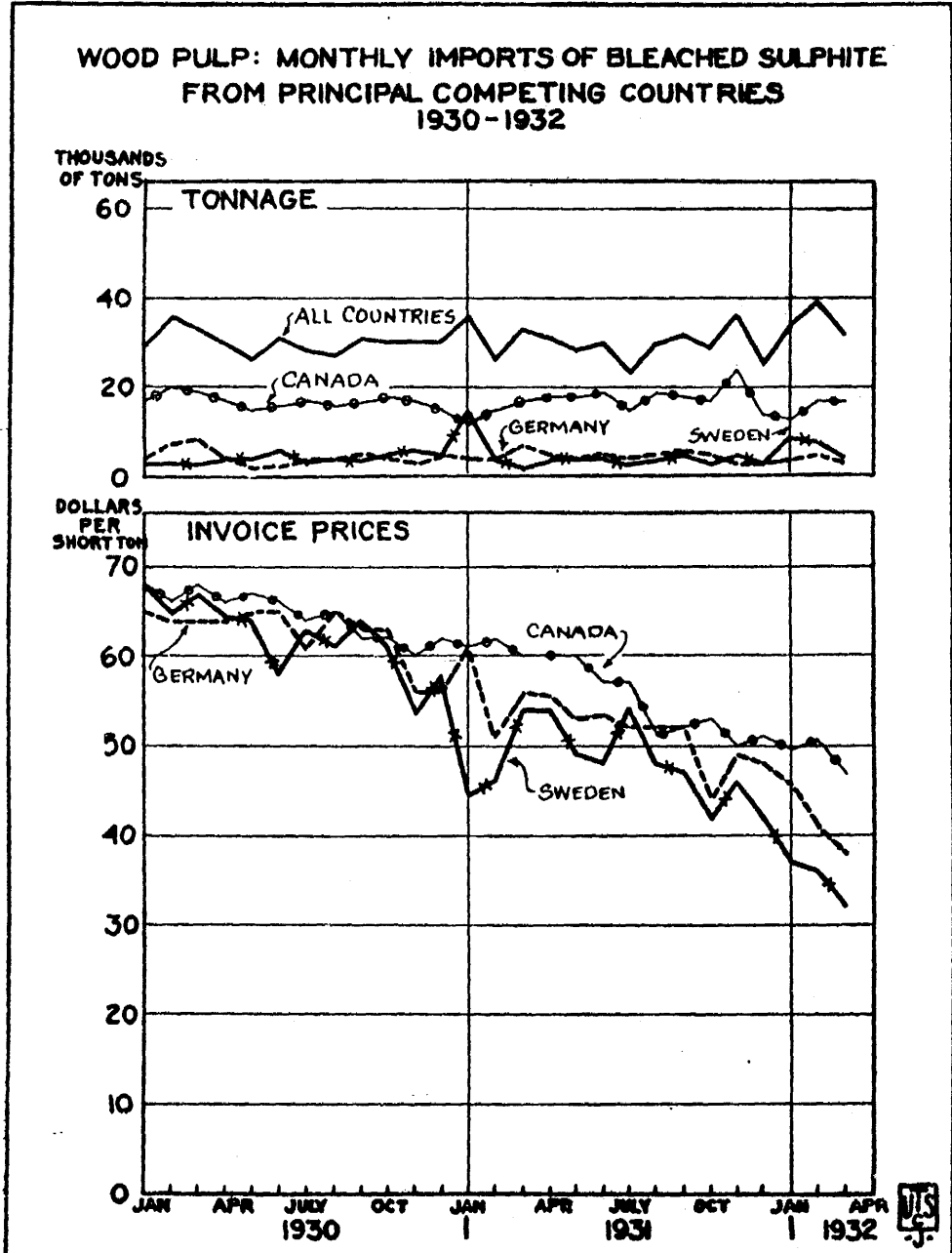


CHART M

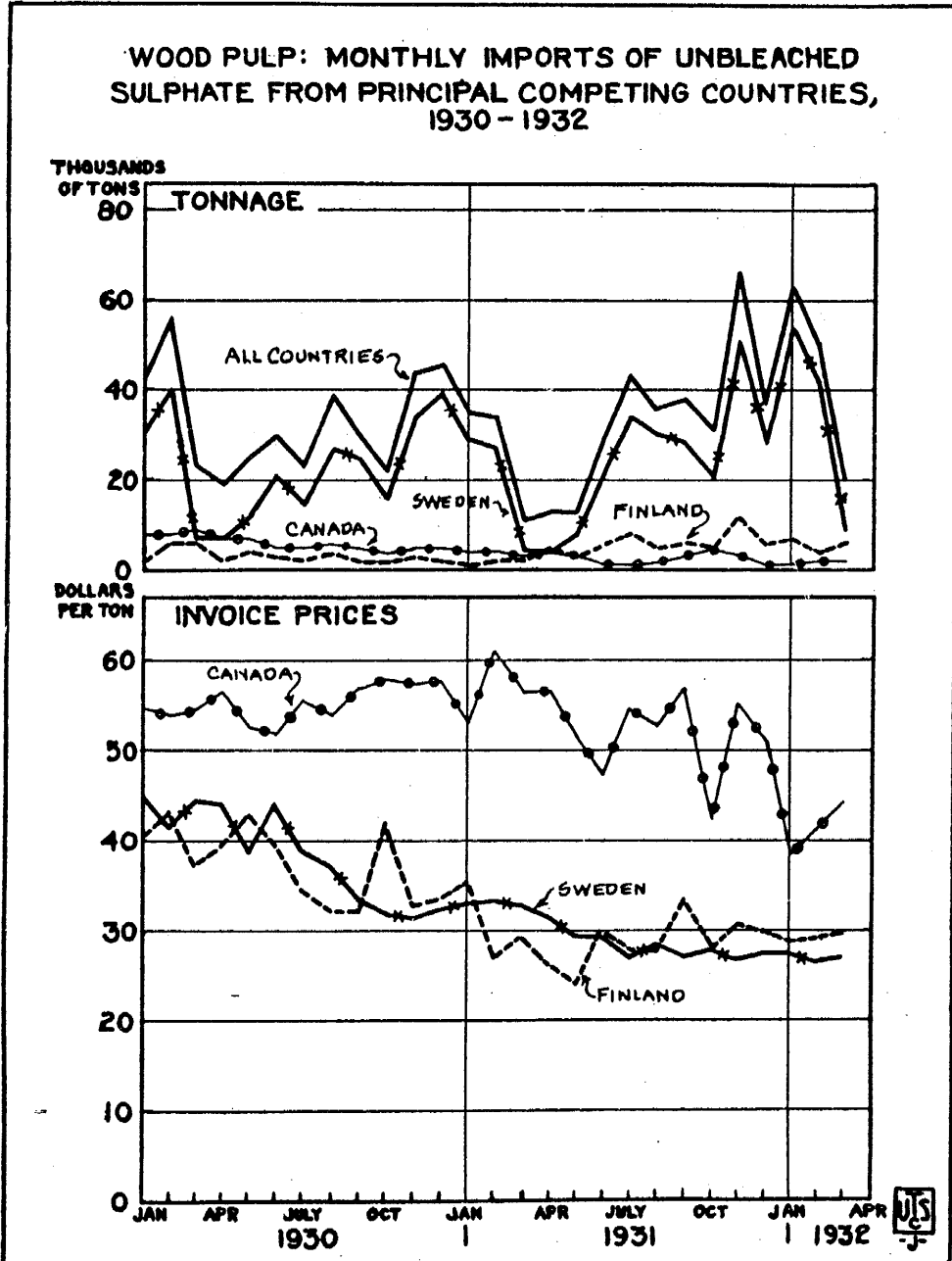
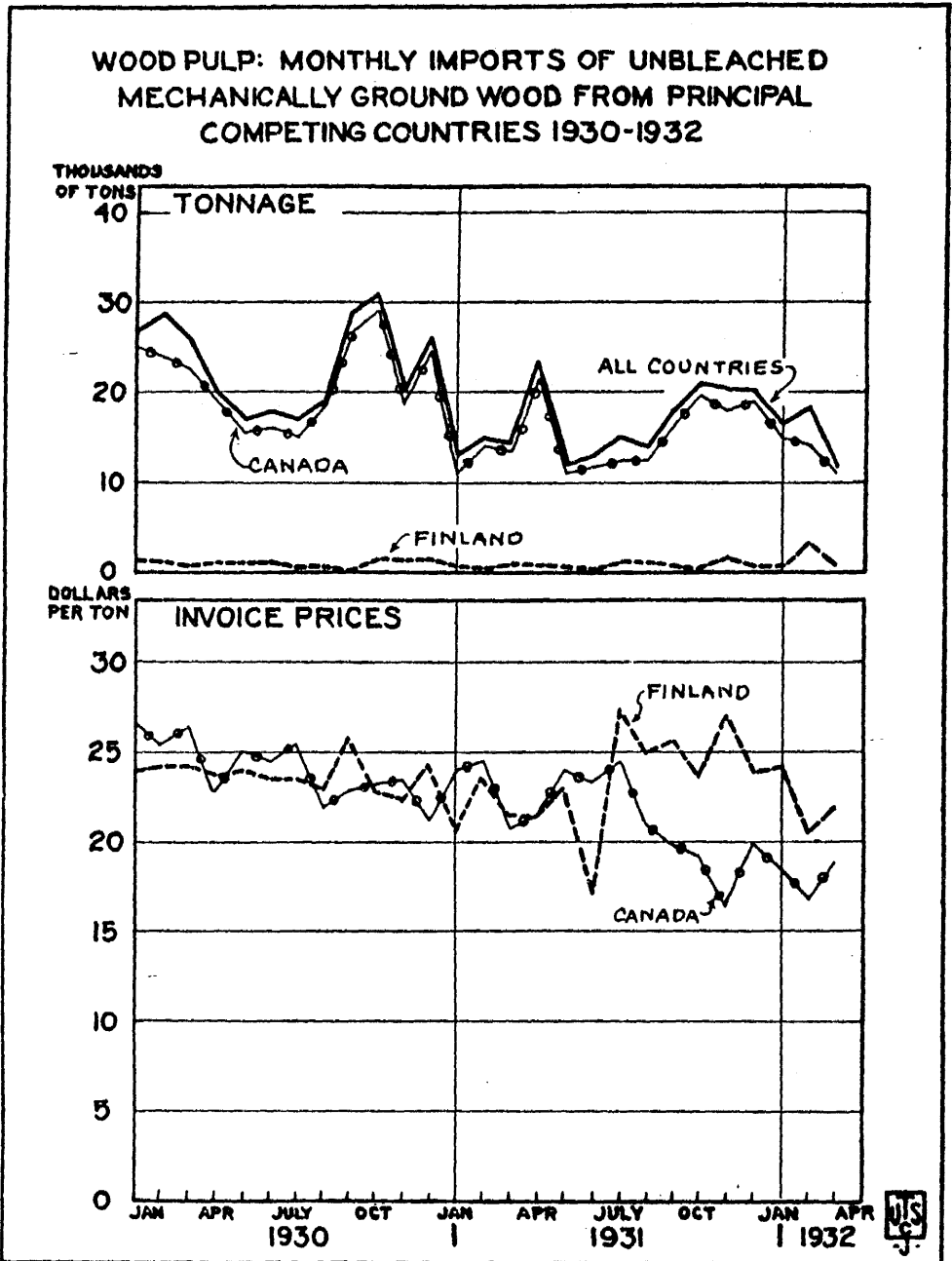


CHART N



CONTRACTS FOR PRINCIPAL KINDS OF EUROPEAN PULP

Table 33 shows the quantity of contracts made by importers reporting to the Tariff Commission for the delivery of the principal individual kinds of European pulp, by quarters. The table shows extremely irregular movements for each of the three principal kinds and these movements are not in harmony. In the case of unbleached sulphite, the largest quantity contracted for during any quarter was in the last quarter of 1931, although the relative increase for that quarter over the third quarter was no greater than that for the third quarter as compared with the second. The largest quantities of unbleached sulphate contracted for were in the second quarter of 1931, and contracts placed during the third quarter were also very large, whereas those placed during the fourth quarter, after depreciation of the currency had begun, were smaller than in any other quarter covered by the table.

TABLE 33.—*Wood pulp: Contracts for purchase of principal kinds from European countries, monthly averages, by quarters*

[Tons of 2,000 pounds]

Year and quarter	Total all kinds	Unbleached sulphite	Bleached sulphite	Unbleached sulphate	All other
1929					
January-March.....	60,729	33,139	4,819	21,944	827
April-June.....	98,586	58,408	7,371	32,403	404
July-September.....	64,192	26,220	8,890	25,116	3,966
October-December.....	65,842	8,842	14,244	34,106	8,650
1930					
January-March.....	56,221	23,403	14,656	17,303	859
April-June.....	123,790	44,703	8,399	69,275	1,413
July-September.....	91,582	35,749	7,956	44,323	3,554
October-December.....	89,863	45,883	5,315	36,721	1,944
1931					
January-March.....	87,940	47,906	11,038	25,437	3,559
April-June.....	122,196	38,679	9,398	71,117	3,002
July-September.....	125,987	52,540	5,867	65,220	2,360
October-December.....	96,124	70,531	11,294	12,372	1,927

PRODUCTION AND SHIPMENTS OF PRINCIPAL KINDS OF PULP BY
DOMESTIC PULP MILLS

Table 34 shows for the pulp mills reporting to the Tariff Commission, and for each principal kind of wood pulp, the total production and the shipments to paper mills during each quarter since 1929. The reports received by the commission represent a larger proportion of the total output of all mills in the country in the case of certain classes of wood pulp than in the case of others. Consequently the relative importance of the several kinds in production and in shipments can not be judged from the data shown in this table. The movements from quarter to quarter as shown by the returns from the reporting mills are presumably fairly representative of the movements for the entire country.

The corresponding figures by months are shown in the appendix.

TABLE 34.—Wood pulp: Production of principal kinds by mills reporting to the Tariff Commission, and shipments of each kind to paper mills, by quarters

Year and quarter	Sulphite, unbleached			Sulphite, bleached			Sulphate, unbleached			Soda, bleached			Ground wood, unbleached		
	Production	Shipments to paper mills		Production	Shipments to paper mills		Production	Shipments to paper mills		Production	Shipments to paper mills		Production	Shipments to paper mills	
		Affiliated	Unaffiliated		Affiliated	Unaffiliated		Affiliated	Unaffiliated		Affiliated	Unaffiliated		Affiliated	Unaffiliated
1929															
First.....	135,589	103,283	22,790	115,261	81,263	27,325	108,374	106,872	3,031	82,098	59,750	19,285	254,707	250,947	2,123
Second.....	143,241	103,558	27,593	121,776	82,347	36,014	116,485	116,410	1,731	85,897	62,553	19,548	278,270	271,639	1,491
Third.....	136,667	99,101	25,853	120,463	82,167	31,096	116,473	115,357	2,919	85,050	63,461	18,704	202,605	208,057	2,619
Fourth.....	145,501	104,352	27,164	121,992	83,174	28,694	110,509	109,760	2,437	85,365	64,268	18,234	206,805	204,420	5,527
Total.....	560,998	410,294	103,400	479,492	328,951	123,129	451,841	448,408	10,118	338,410	250,032	75,771	942,387	935,063	11,760
1930															
First.....	147,261	107,590	30,288	122,693	85,712	31,719	117,554	115,778	674	86,345	63,194	18,896	245,731	237,060	3,322
Second.....	139,585	105,028	23,352	117,041	84,906	29,486	126,839	124,268	453	82,185	61,670	17,799	277,532	267,078	2,364
Third.....	131,590	99,779	22,741	116,265	79,123	29,522	127,977	124,062	66	64,697	48,674	12,982	194,100	198,144	1,570
Fourth.....	125,117	96,612	20,987	114,703	73,405	34,084	123,261	120,420	42	65,598	49,759	13,412	203,461	204,259	2,193
Total.....	543,553	409,009	97,368	470,702	323,146	124,811	495,631	484,528	1,235	298,825	223,297	63,089	920,824	906,541	9,449
1931															
First.....	117,658	90,209	20,819	110,108	73,027	46,796	119,924	120,025	28	64,826	50,845	10,384	224,433	220,746	4,010
Second.....	132,431	89,829	29,132	106,448	68,295	40,599	125,726	128,615	31	60,403	47,718	8,938	236,397	224,576	2,171
Third.....	122,760	88,535	26,113	108,730	64,123	41,260	118,111	122,861	24	51,072	42,337	7,014	188,131	186,058	3,011
Fourth.....	114,360	80,682	19,814	98,286	57,486	33,153	110,105	110,985	968	47,284	38,684	6,048	204,853	200,447	1,956
Total.....	487,209	349,255	95,878	423,572	262,931	161,808	473,867	482,486	1,051	223,585	179,584	32,384	853,814	831,827	11,184

RECEIPTS OF PRINCIPAL KINDS OF PULP BY PAPER MILLS

Table 35 shows for each of the principal kinds of wood pulp the receipts of the paper mills reporting to the Tariff Commission during each quarter since 1929, distinguishing the sources. As already stated, the mills reporting to the commission are not representative of all mills for the reason that they include a much larger proportion of the "converting" mills than of the "integrated" mills. There is reason to believe, also, that the consumption of the different kinds of pulp by mills reporting to the commission is in somewhat different proportions from the consumption of those which did not report. Consequently, none of the figures for a given quarter as shown in Table 34 should be taken as indicating the relative importance of the different kinds of pulp in the consumption of the country as a whole, or the relative importance of the different sources in the consumption of a particular kind of pulp in the country as a whole. The significance of the table lies in the variations shown from quarter to quarter.

Monthly data corresponding to the quarterly figures of Table 35 are given in Tables 109 to 112 in the appendix.

TABLE 35.—Receipts of each principal kind of pulp by paper mills reporting to the Tariff Commission, from different sources, monthly averages by quarters, 1929-1931, and by months, July-December, 1931

[Tons of 2,000 pounds]

Period	All pulp			All chemical pulp			Sulphite, unbleached			Sulphite, bleached		
	From domestic mills		From foreign mills ¹	From domestic mills		From foreign mills ¹	From domestic mills ¹		From foreign mills ¹	From domestic mills ¹		From foreign mills ¹
	Affiliated	Unaffiliated		Affiliated	Unaffiliated		Affiliated	Unaffiliated		Affiliated	Unaffiliated	
1929												
January-March.....	17,638	18,720	56,802	12,783	18,485	50,386	944	1,534	22,384	4,201	10,557	11,795
April-June.....	17,919	19,237	64,012	13,840	19,078	56,646	887	2,033	24,974	4,346	10,745	13,507
July-September.....	20,379	19,420	60,949	16,956	19,198	54,588	780	2,123	24,671	4,663	10,658	11,537
October-December.....	20,417	19,052	61,725	17,036	18,661	54,571	1,605	2,678	26,114	4,907	9,984	12,519
1930												
January-March.....	20,956	18,403	57,224	17,993	18,055	50,429	887	2,361	23,107	5,445	10,115	12,324
April-June.....	21,059	16,568	50,613	18,285	16,302	43,633	867	2,064	21,825	5,165	9,633	11,456
July-September.....	14,651	13,220	53,442	12,503	12,874	47,079	705	1,507	21,386	4,742	8,370	16,694
October-December.....	14,807	13,812	59,670	12,384	13,546	50,369	1,170	1,633	22,862	4,325	8,994	10,147
1931												
January-March.....	14,717	17,618	57,830	11,564	17,358	53,467	446	2,483	26,045	4,640	11,808	10,600
April-June.....	14,492	17,195	56,728	10,839	16,936	52,960	449	2,508	22,587	3,240	11,744	10,634
July-September.....	12,655	14,338	57,994	9,514	14,074	54,458	372	2,087	24,659	2,336	10,278	9,453
October-December.....	13,719	14,225	62,462	10,573	13,949	56,586	1,153	2,643	26,925	2,971	10,088	9,634
1931												
July.....	12,310	13,921	60,397	9,211	13,739	57,933	203	2,027	24,266	2,379	9,951	8,666
August.....	12,388	14,203	52,058	9,253	13,828	50,224	306	2,050	23,135	1,996	10,288	8,962
September.....	13,266	14,891	61,529	10,077	14,656	55,218	607	2,183	26,576	2,632	10,594	10,732
October.....	13,576	14,352	56,532	10,463	14,199	51,688	809	2,525	25,449	3,032	10,173	10,699
November.....	13,850	14,970	67,700	10,206	14,537	61,348	1,709	2,638	28,353	2,814	10,626	8,995
December.....	13,730	13,353	63,154	10,666	13,110	56,723	942	2,765	26,973	3,066	9,466	9,208

Period	Sulphate, bleached and unbleached			Soda, bleached and unbleached			Mechanical, bleached and unbleached		
	From domestic mills		From foreign mills ¹	From domestic mills		From foreign mills ¹	From domestic mills		From foreign mills ¹
	Affiliated	Unaffiliated		Affiliated	Unaffiliated		Affiliated	Unaffiliated	
1929									
January-March.....	2,432	3,012	15,799	5,206	3,382	408	4,554	234	6,417
April-June.....	2,986	2,653	17,742	5,620	3,647	423	4,079	160	7,366
July-September.....	5,378	2,501	17,840	6,136	3,917	540	3,423	222	6,361
October-December.....	4,883	2,388	15,454	5,641	3,610	484	3,380	391	7,154
1930									
January-March.....	5,404	2,263	14,706	6,257	3,315	290	2,963	347	6,795
April-June.....	6,832	1,370	9,984	5,420	3,235	368	2,774	265	6,980
July-September.....	2,076	457	14,788	4,980	2,539	211	2,149	347	6,362
October-December.....	1,878	459	16,890	5,012	2,459	470	2,423	267	9,302
1931									
January-March.....	1,565	699	16,517	4,913	2,368	304	3,153	260	4,364
April-June.....	1,907	649	19,322	5,243	2,035	417	3,653	259	3,768
July-September.....	1,973	78	19,960	4,833	1,634	386	3,141	264	3,536
October-December.....	1,413	79	19,745	5,041	1,139	282	3,140	276	5,876
1931									
July.....	1,655	121	24,763	4,974	1,640	238	3,099	182	2,464
August.....	2,192	20	18,040	4,759	1,470	87	3,135	375	1,834
September.....	2,072	88	17,076	4,766	1,791	334	3,189	235	6,311
October.....	1,512	146	15,398	5,110	1,355	142	3,113	153	4,844
November.....	1,552	70	23,919	4,531	1,202	81	3,244	433	6,352
December.....	1,175	20	19,918	5,483	859	624	3,064	243	6,431

¹ Total affiliated and unaffiliated.

STOCKS OF PULP IN WAREHOUSES AT PRINCIPAL PORTS

At several of the seaports of the United States there are maintained large stocks of wood pulp. The stocks are usually held in general public warehouses or in railway warehouses. The stocks for the most part consist of imported pulp. These stocks should not be confused with such as may be maintained at pulp mills or at paper mills. In general, pulp mills keep very small stocks, their shipments being parallel with their production, and comparatively few of the paper mills maintain important stocks. Details regarding the stocks at the principal individual ports as of January 1 and July 1 of each year since 1929 and as of February 1, 1932, are shown in the appendix. The combined totals for all the ports from which returns were received (Portland, Boston, New York, Philadelphia, Baltimore, Norfolk, Newport News, and New Orleans) for domestic and imported pulp were as follows:

[Tons of 2,000 pounds]

	Foreign	Domestic		Foreign	Domestic
1929—Jan. 1.....	40, 165	278	1931—Jan. 1.....	101, 623	12, 915
July 1.....	46, 825	6, 104	July 1.....	73, 695	8, 267
1930—Jan. 1.....	62, 900	10, 763	1932—Jan. 1.....	100, 604	11, 284
July 1.....	71, 409	4, 368	Feb. 1.....	150, 133	10, 744

It will be seen that stocks of imported pulp at the Atlantic and Gulf ports increased rapidly from January 1, 1929, to January 1, 1931. There was a decline of more than one-fourth on July 1 as compared with January 1 of last year, but this was almost exactly equaled by an increase during the next six months. On January 1, 1932, the reported stocks of imported pulp amounted to a little over 100,000 tons. In the single month of January this figure increased by nearly 50 per cent, the stocks as of February 1 amounting to 150,000 tons, a quantity about equal to the average importation of pulp during one month. The relation of the increase in stocks during the winter months of the last two years to the seasonal variation of imports, especially from Sweden, has already been noted; statistics of stocks are not available for March 1 or April 1.

PRODUCTION BY REPORTING MILLS IN MAJOR PULP-PRODUCING REGIONS

PRODUCTION OF ALL KINDS OF PULP COMBINED

Table 36 shows, by quarters, the production of pulp mills reporting to the Tariff Commission in the several major pulp-producing regions of the United States. It also shows their shipments to affiliated domestic paper mills and to unaffiliated domestic paper mills. The total shipments in each case are substantially equal to the production.

The reports to the Tariff Commission from pulp mills in different parts of the country were not equally complete, and the distribution of the reported production among the five regions is somewhat different for the year 1929 from that shown in the census reports covering all mills. Nevertheless the data are sufficiently representative to permit approximate conclusions as to the trend of total production from quarter to quarter in each of the regions.

TABLE 36.—Wood pulp: Production in major pulp-producing regions¹ by domestic pulp mills reporting to the Tariff Commission, and shipments to affiliated and unaffiliated paper mills, by quarters

Year and quarter	Production							
	Tons of 2,000 pounds				Relative to 1930 as 100			
	Region I	Region II	Region III, IV	Region V	Region I	Region II	Region III, IV	Region V
1929								
January-March	344,403	119,206	93,564	159,941	107	96	101	94
April-June	363,602	135,241	96,648	181,034	113	108	104	106
July-September	327,328	121,473	95,159	142,585	102	97	103	84
October-December	336,288	126,401	91,082	143,691	105	101	98	84
Total	1,371,621	502,411	376,453	627,161				
1930								
January-March	344,941	132,932	88,391	180,627	108	107	96	106
April-June	353,918	134,777	99,349	187,829	110	108	107	110
July-September	295,854	119,712	89,847	150,997	92	96	97	89
October-December	288,135	111,730	92,521	160,891	90	90	100	95
Total	1,282,848	499,151	370,108	680,344				
1931								
January-March	280,266	111,801	99,885	164,567	87	90	108	96
April-June	300,245	120,798	96,017	169,361	94	97	104	89
July-September	262,620	104,257	97,014	143,727	82	84	105	84
October-December	267,387	104,366	84,138	143,212	83	84	91	84
Total	1,110,518	441,222	377,054	620,867				
	Shipments to affiliated paper mills				Shipments to unaffiliated paper mills			
1929								
January-March	311,665	105,723	84,346	119,786	27,563	14,020	7,786	26,931
April-June	327,180	115,854	85,684	136,005	30,660	15,932	7,607	34,526
July-September	303,915	106,400	84,232	96,153	29,722	14,646	7,620	30,970
October-December	397,271	105,194	80,273	94,941	30,225	16,588	7,424	31,316
Total	1,250,031	433,171	334,585	446,885	118,170	61,186	30,437	123,743
1930								
January-March	304,436	118,925	77,524	132,437	33,054	14,636	6,965	33,444
April-June	323,382	118,829	88,346	141,888	26,373	12,083	6,611	31,396
July-September	280,865	112,044	81,000	96,690	19,773	8,560	5,078	34,387
October-December	272,774	104,530	85,343	102,009	18,762	7,384	5,655	39,770
Total	1,181,457	454,328	332,213	473,024	97,962	42,663	24,309	138,997
1931								
January-March	264,038	103,451	90,697	115,106	18,361	6,861	5,136	51,679
April-June	272,080	111,551	89,250	109,913	19,264	7,149	3,677	50,802
July-September	246,779	98,159	92,356	84,870	16,902	7,326	2,853	50,362
October-December	253,345	94,669	79,083	84,579	12,741	6,853	2,939	39,406
Total	1,036,242	407,830	351,386	394,468	67,268	28,189	14,605	192,249

¹ Region I includes New England, New York, and Pennsylvania; Region II, Michigan, Wisconsin, and Minnesota; Region III, Ohio, West Virginia, and Virginia; Region IV, the Southern States; Region V, the Pacific Coast States.

This table shows that in the northeastern region the decline in production which had been taking place from 1926 to 1930 continued in 1931 and was even considerably accentuated. From 1926 to 1930 total production, as reported to the Bureau of the Census, in the Lake States region had remained more or less stationary; a considerable decline appeared in 1931 but less marked than in the northeastern region. For a number of years up to and including 1930 there had been a marked increase in the output of the Pacific coast region, but

this increase did not continue in 1931; the percentage of decline in that region was however somewhat less than in the northeastern region or in the Lake States region. The decline was confined to the pulp shipped to affiliated paper mills, the shipments to unaffiliated mills having increased markedly. In Regions III and IV combined (the Central Eastern States and the South, the two not being distinguished in order to avoid disclosure of operations of individual concerns) where production had been materially increasing for some time prior to 1930, there was a further slight increase in 1931.

In considering the quarterly movements it should be borne in mind that the pulp industry is in some measure seasonal, production normally being larger during the first half of the year than during the second half. Taking this factor into consideration it may be stated that there was a fairly steady downward trend in production from quarter to quarter beginning at the middle of 1930, in regions I and II.

In most of the regions shipments of pulp mills to unaffiliated paper mills have fallen much more during the last three years than their shipments to affiliated mills. The Pacific coast is an exception. For the northeastern region shipments of reporting pulp mills to unaffiliated paper mills during the last quarter of 1930 were more than 40 per cent less than during the first quarter of that year, and the decline between the first and last quarter of 1931 was about 30 per cent. On the other hand, the shipments of Pacific coast pulp mills to unaffiliated paper mills increased between the first and last quarters of 1930 and increased still further in the first quarter of 1931 and were well maintained during the next two quarters of 1931. During the third quarter of 1931 the shipments to unaffiliated paper mills in Region I, in Region II, and in Regions III and IV together, were only about half as great as during the first quarter of 1930, whereas the corresponding shipments of the Pacific coast mills had increased about 50 per cent.

A considerable fraction of the total sales of Pacific coast mills to unaffiliated paper mills is shipped through the Panama Canal to eastern ports, whence they penetrate for some distance into the interior. The following statement shows the quantity of wood pulp moving from Pacific coast ports to Atlantic and Gulf ports during each quarter, beginning with July, 1930.¹

	Tons
1930—July to September	24, 347
October to December	32, 517
1931—January to March	22, 700
April to June	25, 901
July to September	40, 352
October to December	32, 471

Whatever direct effect upon the sales of pulp mills to unaffiliated paper mills may have resulted from currency depreciation must, of course, appear only after the end of the third quarter of 1931, and for reasons already set forth it could hardly be expected that the effect would be considerable until November. From the third to the fourth quarter of last year the shipments to unaffiliated paper mills by the pulp mills of the northeastern region declined about 24 per cent, and similar shipments of mills in the Pacific coast region declined by substantially the same percentage. The decline for the northeastern region was a continuance of that which had already

¹ Data furnished by the U. S. Shipping Board.

been manifest. Much less decline appeared in the shipments of the Lake States mills during the last quarter of 1931, and there was a slight increase in those of the mills of Regions III and IV, which, however, are not very large factors in the total supply of the "converting" paper mills.

PRODUCTION OF PRINCIPAL KINDS OF PULP, BY REGIONS

Table 37 shows the production of each principal kind of wood pulp by the domestic pulp mills reporting to the Tariff Commission. Very marked differences appear in the relative regional movements from quarter to quarter as between the different kinds.

Unbleached sulphite pulp is the most important class in the imports into the United States and also in the sales of domestic pulp mills to unaffiliated paper mills. This class is particularly important in the pulp industry of the Pacific coast. That region showed relatively little general downward trend in unbleached sulphite from the beginning of 1930 to the third quarter of 1931, and only a moderate fall in the last quarter, whereas a marked decline had taken place throughout the two years in the northeastern and Lake regions. In the case of bleached sulphite, the Pacific coast showed an increase in production, during 1930 and most of 1931, the Lake States a moderate decline, and the Northeastern States, a conspicuous decline. In the case of unbleached sulphate, the Pacific coast mills show a conspicuous decline in production throughout 1931 as compared with 1930, whereas production in the other regions which are important in this kind of pulp was fairly well maintained: very little unbleached sulphate is produced in the Northeastern States. Moreover, in the case of ground wood, unbleached, relatively little of which is sold to unaffiliated paper mills, the output of the Pacific coast declined more sharply in 1931 than that of the other principal producing region, the northeastern.

TABLE 37.—Production of principal kinds of pulp by reporting mills in each of the major pulp-producing regions,¹ by quarters

[In tons of 2,000 pounds]

	Sulphite, unbleached				Sulphite, bleached				Sulphate, unbleached				Soda, bleached		Ground wood, unbleached			
	I	II	III-IV	V	I	II	III-IV	V	II	III	IV	V	I	III-IV	I	II	III-IV	V
1929																		
January-March.....	50,982	33,484	609	50,513	60,758	22,983	10,451	21,069	29,165	18,694	41,823	18,692	60,707	21,391	168,658	15,786	596	69,667
April-June.....	52,488	34,359	787	55,608	62,323	27,244	9,760	22,449	28,549	19,426	42,383	26,127	62,195	23,702	182,715	18,115	589	76,856
July-September.....	49,868	30,729	133	55,937	59,966	26,907	10,568	23,022	28,444	17,984	41,762	28,283	60,913	24,137	152,674	14,013	575	35,343
October-December.....	55,092	31,757	157	58,495	60,443	27,463	9,768	24,318	27,530	17,417	40,033	25,529	62,313	23,052	154,091	16,800	656	35,259
1930																		
January-March.....	56,018	30,949	178	60,116	63,527	28,116	9,067	21,984	32,881	19,022	36,510	29,141	63,689	22,656	157,846	17,540	958	69,387
April-June.....	51,937	29,163	225	58,259	56,589	27,198	9,783	23,470	30,497	20,598	44,566	31,178	58,429	23,756	183,245	18,946	421	74,922
July-September.....	48,644	28,109	172	54,666	47,810	27,673	9,169	31,673	32,870	21,380	40,755	32,972	46,642	18,055	149,961	12,076	376	31,686
October-December.....	46,298	25,535	100	53,183	45,947	23,453	9,476	35,827	28,819	20,949	43,140	30,352	47,351	18,247	146,150	15,177	607	41,528
1931																		
January-March.....	43,136	23,727	145	50,650	42,150	26,766	10,965	30,228	29,742	21,452	47,010	21,720	44,495	19,831	148,048	13,934	482	61,969
April-June.....	43,801	25,339	95	63,196	40,517	25,491	9,500	30,940	31,230	21,143	48,055	25,298	43,929	16,474	170,157	15,653	659	49,927
July-September.....	41,966	23,521	.....	57,273	36,029	24,785	9,327	38,588	27,916	18,760	53,352	18,083	36,089	14,983	146,590	11,076	682	29,783
October-December.....	39,679	21,264	.....	53,417	35,840	21,087	6,466	34,893	26,604	17,749	45,246	20,507	33,198	14,086	155,951	13,916	592	34,395

¹ Region I comprises New England, New York, and Pennsylvania; Region II, Michigan, Wisconsin, and Minnesota; Region III, Ohio, West Virginia, and Virginia; Region IV, the Southern States; Region V, the Pacific Coast States.

CONTRACTS FOR PURCHASES OF EUROPEAN PULP BY REGIONS

Table 38 shows the quantity of European pulp covered by contracts reported to the Tariff Commission by importers, distinguishing the several regions of the United States in which foreign pulp is consumed. The reports cover much the larger part of the total importations and may be considered representative.

It has already been pointed out that the contracts for all kinds of European pulp combined, reported for the United States as a whole, were materially greater in the second and third quarters of 1931 than in the fourth quarter, a fact attributable to the very small amount of unbleached sulphate contracted for in the fourth quarter, whereas the contracts for unbleached sulphite in that quarter were the largest reported for any quarter during the last three years.

The table shows that prior to 1931 nearly all of the imported pulp was sold for delivery either in Region I (the Northeastern States) or in Region II (the North Central). In 1931 contracts of considerable magnitude were made for sales into Region III, comprising the Eastern States ranging from Delaware south to the Carolinas, most of these contracts having been made, however, during the first three quarters of the year.

As between Region I and Region II, no parallelism appears in the changes in the quantities contracted for from quarter to quarter. In the case of the northeastern region the largest contracts reported were for the second quarter of 1931, the next largest for the third quarter of that year, and the third largest for the fourth quarter. In contracts for delivery to the North Central States, the largest total appears for the second quarter of 1930, and the next largest for the third quarter of 1931; the contracts during the fourth quarter of 1931 for this region were about 40 per cent less than during the third quarter.

TABLE 38.—*Wood pulp: Summary of contracts for purchases (all kinds combined) from European countries by regions and¹ by quarters*

[Tons of 2,000 pounds]

Period in which contracts were made ²	Region I	Region II	Region III	Region IV	Total, United States
1929					
First quarter.....	99,457	66,143	15,920	667	182,187
Second quarter.....	172,992	111,028	11,737	.....	295,757
Third quarter.....	128,658	55,166	7,883	868	192,575
Fourth quarter.....	134,938	53,267	9,126	194	197,525
Total for year.....	536,045	285,604	44,666	1,729	868,044
1930					
First quarter.....	107,500	54,081	6,879	202	168,662
Second quarter.....	175,184	186,367	9,327	493	371,371
Third quarter.....	153,010	110,728	9,498	1,510	274,746
Fourth quarter.....	147,762	108,666	11,134	2,027	269,589
Total for year.....	583,456	459,842	36,838	4,232	1,084,368
1931					
First quarter.....	143,599	90,105	27,383	2,733	263,820
Second quarter.....	252,001	83,643	30,205	650	366,589
Third quarter.....	183,822	161,447	31,732	900	377,901
Fourth quarter.....	180,526	97,340	10,266	241	288,373
Total for year.....	759,948	432,535	99,676	4,584	1,290,743

¹ Region I includes Maine, New Hampshire, Vermont, Massachusetts, New York, Connecticut, Rhode Island, Pennsylvania, and New Jersey. Region II includes Minnesota, Wisconsin, Michigan, Illinois, Indiana, and Ohio. Region III includes Delaware, Maryland, Virginia, West Virginia, North and South Carolina. Region IV includes Tennessee, Alabama, Mississippi, Louisiana, and Texas.

² Data are totals for the quarter, not monthly averages.

IV. PRICES OF WOOD PULP AS RELATED TO CURRENCY DEPRECIATION

INTRODUCTION

The information available to the Tariff Commission with regard to the movement of the prices of wood pulp is based on the official statistics of average unit values and on reports from importers, pulp mills, and paper mills. All these data are in the nature of general averages for a given kind of pulp, such as unbleached sulphite or unbleached ground wood, and are obtained by dividing the total value by the total quantity. It was not possible to obtain average prices for the different grades of a given kind of pulp.

The lack of precise information concerning the prices of specific grades makes it necessary to confine consideration to the relative movements of the averages from month to month. The data do not afford a basis for determining whether at a given time the prices were higher or lower for the domestic pulp than for the foreign pulp. It is entirely possible that the average grade of the domestic product may be different from that of the product of a given foreign country of the same class. On general economic grounds one would expect that the prices quoted by different producers, whether domestic or foreign, for the same grade of the same kind of pulp would be substantially the same at a given time, and would show substantially the same movements. It is impossible from any general averages of prices or unit values to determine whether the initiation of a given movement, up or down, in the prices of a given kind of pulp is to be attributed to action of one class of producers rather than another.

In addition to uncertainty as to the comparability of the pulp sold by different groups of producers, domestic or foreign, there is in the price data here presented a factor of incomparability as regards the place to which the several prices relate. For imports, in accordance with the official practice, the values are those as of the foreign country. For domestic producers of pulp, the average sales value has been taken f. o. b. at the producing plant, and these averages, for a given kind of pulp, may naturally be different for plants in different parts of the country. The average cost of pulp purchased by paper mills, on the other hand, includes delivery to those mills; the average might be expected, therefore, to be somewhat higher than the sales value f. o. b. plant of the pulp mills; moreover, the unit costs will naturally be different for paper mills in different sections of the country, depending upon the distance from which pulp must be brought.

The price data obtained from importers of pulp relate to the contracts made during a given period of time and not to actual deliveries made during that period. These average contract values were obtained both on the basis of prices c. i. f. Atlantic ports and on the basis of prices c. i. f. buyer's mill. For most purposes, prices at the ports are the more significant.

Notwithstanding these limitations with respect to the comparability of the price data for wood pulp, they afford a much more complete picture of the trend during the last three years than is available from any other source.

In considering the relation of depreciation of the currency in foreign pulp-producing countries to the prices and unit values shown in this section, it should be noted that all the data are in terms of United States dollars. Importers make contracts in terms of our currency, and so far as the invoices of imports may have been expressed in foreign currency they have been converted, by the customs authorities, to dollars on the basis of the current rate of exchange.

As already pointed out, the depreciation in the foreign pulp-producing countries began in the latter part of September and could scarcely be expected to exercise any influence on the average unit value of the actual arrivals of pulp in the United States for some time after that. A still more important point to be noted is that a large proportion of the deliveries of pulp to the paper mills, both from foreign sources and by American pulp producers, is on contracts made some time previous to the delivery date. In some cases the buyers who have entered into long-term contracts are able to obtain readjustments where current prices have fallen, but this is not universal, and in times of declining prices the average price received by producers on their actual shipments, or paid by paper mills on their actual receipts, during a given period is to some extent influenced by the higher quotations of earlier months.

FOREIGN UNIT VALUE OF IMPORTS AND CONTRACT PRICES FOR IMPORTED PULP

AVERAGE FOREIGN UNIT VALUE OF IMPORTS SINCE DEPRECIATION SET IN COMPARED WITH PREVIOUS PERIODS

Summary for the six-month period October-March.

From the statistics of quantity and value of imports of wood pulp into the United States the Tariff Commission has computed the average unit values, as of the foreign country, for the period from October, 1931, just after the depreciation of the currency set in, to March, 1932, and has compared these averages with those for the corresponding period of 1930-31. In view of the general downward trend of prices throughout the last two years, the comparison for the October-March period is set over against a comparison between the period January to September, 1931, and the corresponding period of 1930. Relative numbers summarizing this comparison are presented in Table 39.

TABLE 39.—*Wood pulp: Average foreign unit value of the principal kinds imported—ratio (per cent) for period specified to value during the same period one year earlier*

Kind	All countries	Canada	Sweden	Finland	Germany
Sulphite, unbleached:					
October, 1931-March, 1932.....	83	86	82	95	(1)
January-September, 1931.....	85	89	84	84	(1)
Sulphite, bleached:					
October, 1931-March, 1932.....	78	82	76	(1)	76
January-September, 1931.....	85	87	75	(1)	84
Sulphate, unbleached:					
October, 1931-March, 1932.....	79	79	83	90	(1)
January-September, 1931.....	75	102	73	75	(1)
Mechanical, unbleached:					
October, 1931-March, 1932.....	81	80	(1)	101	(1)
January-September, 1931.....	92	91	(1)	99	(1)

1 Imports unimportant.

This table shows that the average foreign value of the imports of unbleached sulphite pulp, the most important single class in our imports, during the period October, 1931, to March, 1932, was 83 per cent of the corresponding average for the same period one year earlier (a decline of 17 per cent), whereas the average for January to September, 1931, was 85 per cent of the corresponding figure for 1930. In the case of bleached sulphite, as of unbleached, and in the case of unbleached ground wood, the decline in unit value shown for October, 1931, to March, 1932, compared with the same period one year earlier was somewhat greater than the decline shown by the January to September comparison. The opposite, however, was the case with respect to unbleached sulphate.

The average index number of the wholesale prices of all commodities, as reported by the United States Department of Labor, for the period October, 1931, to March, 1932 (on the basis of 1926 as 100), was 86 per cent of the average for the same period of 1930-31; this compares with relatives for the several classes of wood pulp, ranging from 78 to 83.

The table shows also data for each of the principal competing countries with respect to each kind of pulp. In judging the significance of the figures by countries, the difference in the magnitude of the imports from the several countries should be taken into consideration. (See Table 32 and Charts K to N.)

Prices during individual months compared with same months of 1930-31.

Table 40 shows the absolute average unit values corresponding to the relatives shown in Table 39 and also shows values for each individual month from October to March and relatives for these months as compared with the same months of the previous year.

TABLE 40.—Wood pulp: Average foreign unit value of imported pulp, for specified months and periods, with relatives as compared with the same months or periods one year earlier taken as 100

SULPHITE, UNBLEACHED

	Total	Sweden	Finland	Canada
Unit value (per short ton):				
October, 1931.....	\$37. 17	\$36. 88	\$40. 93	\$34. 92
November, 1931.....	36. 84	35. 87	40. 08	35. 21
December, 1931.....	35. 85	35. 22	36. 77	36. 31
January, 1932 ¹	32. 93	33. 22	33. 59	33. 56
February, 1932 ¹	35. 25	33. 21	37. 19	32. 49
March, 1932 ¹	31. 43	28. 60	37. 14	31. 24
Average, October, 1931-March, 1932.....	34. 03	34. 11	38. 03	33. 95
Average, January-September, 1931.....	38. 58	39. 43	37. 04	38. 41
Unit value, relative to same month or period of one year earlier:				
October, 1931.....	89	89	95	82
November, 1931.....	89	82	100	97
December, 1931.....	86	84	92	87
January, 1932 ¹	80	81	83	82
February, 1932 ¹	87	88	102	84
March, 1932 ¹	80	68	95	78
Average, October, 1931-March, 1932.....	83	82	95	86
Average, January-September, 1931.....	85	84	84	89

SULPHITE, BLEACHED

	Total	Canada	Sweden	Germany
Unit value (per short ton):				
October, 1931.....	\$48. 42	\$53. 04	\$41. 71	\$43. 85
November, 1931.....	48. 78	49. 62	49. 03	48. 92
December, 1931.....	47. 97	50. 72	42. 23	48. 01
January, 1932 ¹	43. 43	49. 49	37. 14	45. 47
February, 1932 ¹	43. 04	51. 34	36. 22	40. 67
March, 1932 ¹	41. 52	46. 75	32. 04	38. 22
Average, October, 1931-March, 1932.....	44. 62	50. 12	38. 41	43. 70
Average, January-September, 1931.....	54. 24	57. 44	47. 79	53. 95
Unit value, relative to same month or period of one year earlier:				
October, 1931.....	78	85	68	70
November, 1931.....	85	83	86	87
December, 1931.....	83	82	73	85
January, 1932 ¹	83	81	83	75
February, 1932 ¹	78	93	78	80
March, 1932 ¹	72	78	59	68
Average, October, 1931-March, 1932.....	78	82	76	76
Average, January-September, 1931.....	85	87	75	84

SULPHATE, UNBLEACHED

	Total	Sweden	Finland	Canada
Unit value (per short ton):				
October, 1931.....	\$30. 47	\$27. 66	\$28. 09	\$42. 57
November, 1931.....	28. 65	26. 82	30. 60	55. 21
December, 1931.....	28. 47	27. 49	29. 72	51. 51
January, 1932 ¹	27. 63	27. 23	28. 85	38. 48
February, 1932 ¹	27. 32	26. 50	29. 21	41. 19
March, 1932 ¹	29. 25	27. 09	29. 73	44. 25
Average, October, 1931-March, 1932.....	28. 38	27. 05	29. 58	45. 23
Average, January-September, 1931.....	32. 32	29. 73	28. 83	55. 55
Unit value, relative to same month or period of one year earlier:				
October, 1931.....	79	87	67	73
November, 1931.....	83	85	94	96
December, 1931.....	81	85	89	89
January, 1932 ¹	77	82	81	72
February, 1932 ¹	75	79	108	68
March, 1932 ¹	74	83	101	78
Average, October, 1931-March, 1932.....	79	83	90	79
Average, January-September, 1931.....	75	73	75	102

¹ Preliminary.

TABLE 40.—*Wood pulp: Average foreign unit value of imported pulp, for specified months and periods, with relatives as compared with the same months or periods one year earlier taken as 100*—Continued

MECHANICAL, UNBLEACHED

	Total	Canada	Finland
Unit value (per short ton):			
October, 1931.....	\$19.37	\$19.27	\$23.67
November, 1931.....	17.48	16.59	27.05
December, 1931.....	19.79	19.73	23.93
January, 1932 ¹	18.11	18.42	24.22
February, 1932 ¹	17.37	16.70	20.45
March, 1932 ¹	18.57	18.75	21.92
Average, October, 1931-March, 1932.....	18.48	18.29	22.98
Average, January-September, 1931.....	22.45	22.43	23.57
Unit value, relative to same month or period of one year earlier:			
October, 1931.....	84	83	103
November, 1931.....	75	70	121
December, 1931.....	93	93	98
January, 1932 ¹	76	77	118
February, 1932 ¹	71	68	86
March, 1932 ¹	90	90	102
Average, October, 1931-March, 1932.....	81	80	101
Average, January-September, 1931.....	92	91	99

¹ Preliminary.

CONTRACT PRICES FOR FOREIGN PULP AND AVERAGE FOREIGN UNIT VALUE OF IMPORTS, BY QUARTERS.....

As already stated, reports were obtained from importers covering approximately 90 per cent of the total imports of pulp from European countries. The quantity for each contract lot was ascertained and the price as of United States (Atlantic) seaports, together with the cost of transportation to the various mills concerned, was computed. Weighted averages for each quarter were computed on the basis both of Atlantic port prices and prices delivered to mills.

Table 41 compares for each of the principal kinds of pulp the weighted average contract prices for European pulp c. i. f. Atlantic coast ports with the average foreign unit value of the imports during that quarter (a) from all countries combined and (b) from the principal competing European country. The prices are shown graphically in Chart O. Average unit values of imports from other leading countries are given in later tables (42 and 43) and in Charts P and Q.

It is to be expected, of course, that the contract prices c. i. f. Atlantic ports of the United States will be higher than unit values of imports, since the cost of transportation and importers' charges must be added to the foreign values. It is to be expected, further, that any change in the contract prices will be reflected somewhat later in the average unit value of imported pulp.

The table shows considerable differences among the several kinds of pulp with respect to the movement of prices. In all there has been a decline over the 3-year period taken as a whole, but the total amount of decline is considerably greater for chemical pulp than for mechanical, and the price reductions for the different kinds are not closely parallel in point of time.

TABLE 41.—Wood pulp: Comparison of average contract prices for European pulp with average foreign unit value of imports from all countries and from the principal European competing country

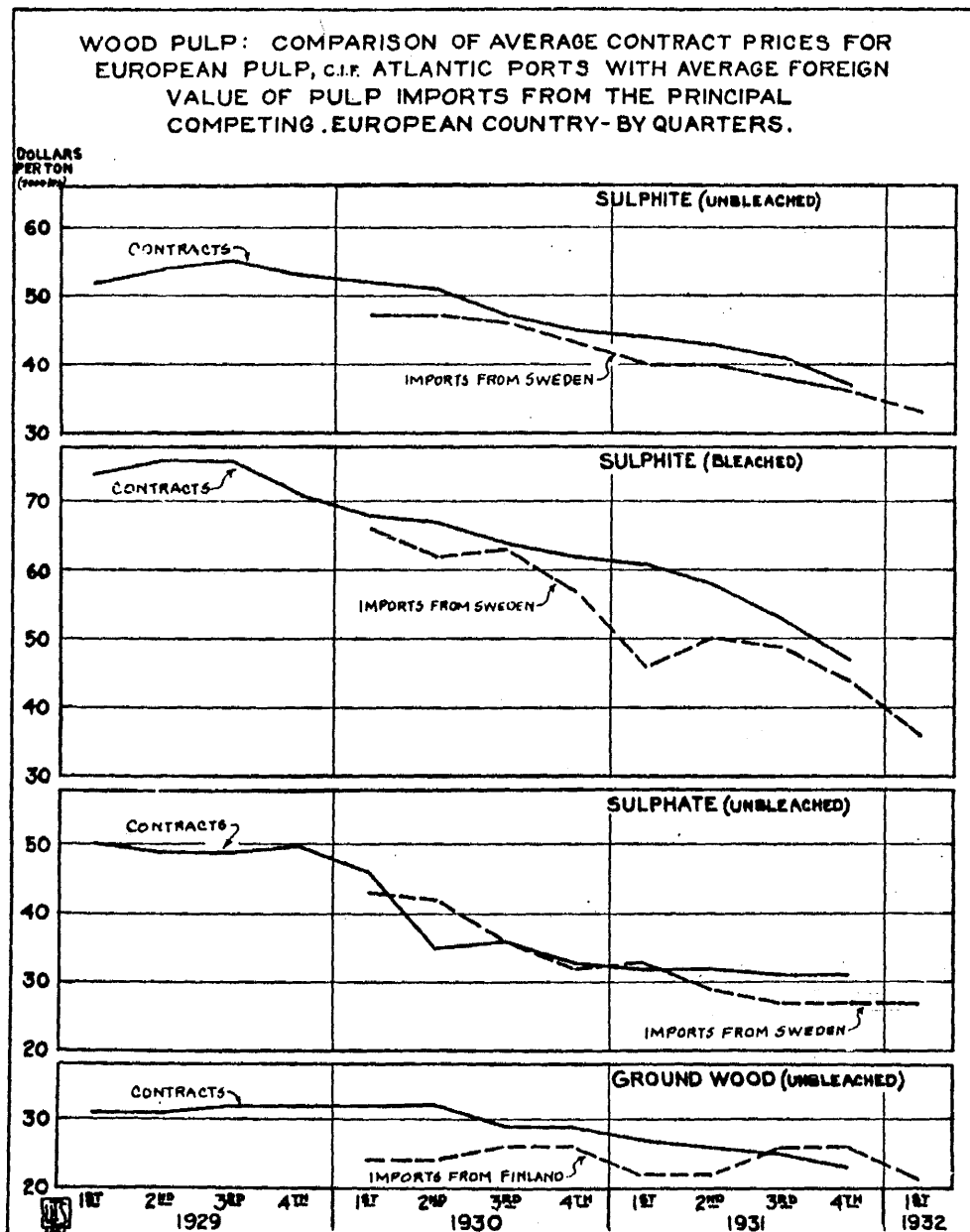
[Per ton of 2,000 pounds]

Year and quarter	Sulphite, unbleached			Sulphite, bleached		
	Con- tracts	Imports		Con- tracts	Imports	
		Total	Sweden		Total	Sweden
1929:						
January-March.....	\$51.80	\$44.95		\$74.40	\$66.65	
April-June.....	54.20	44.39		75.60	68.30	
July-September.....	55.20	45.60		76.40	68.16	
October-December.....	52.80	44.84		71.40	67.55	
1930:						
January-March.....	52.40	46.12	\$47.05	67.60	65.93	\$66.46
April-June.....	51.00	45.48	47.49	67.00	63.41	61.72
July-September.....	47.20	45.32	46.47	64.40	62.52	62.75
October-December.....	44.60	41.88	42.62	61.60	59.23	57.20
1931:						
January-March.....	43.60	39.90	40.21	61.40	55.19	45.84
April-June.....	43.20	37.29	40.00	58.20	55.61	50.21
July-September.....	41.40	38.04	38.25	52.80	51.75	48.83
October-December.....	36.60	35.66	35.98	46.80	46.47	43.68
1932: ¹						
January-March.....		32.81	32.90		43.03	35.73

Year and quarter	Sulphate, unbleached			Mechanical, unbleached		
	Con- tracts	Imports		Con- tracts	Imports	
		Total	Sweden		Total	Finland
1929:						
January-March.....	\$50.20	\$49.88		\$31.00	\$23.46	
April-June.....	48.80	48.41		31.20	21.94	
July-September.....	48.80	46.70		31.60	22.68	
October-December.....	49.60	46.67		32.00	23.27	
1930:						
January-March.....	45.80	45.20	\$43.13	32.20	26.99	\$24.19
April-June.....	34.80	44.85	42.34	31.60	24.02	23.79
July-September.....	36.20	39.45	36.37	29.40	23.02	23.29
October-December.....	32.60	35.55	31.99	29.00	22.59	23.16
1931:						
January-March.....	31.80	36.68	33.42	26.80	22.97	21.70
April-June.....	31.80	32.52	29.60	26.00	22.49	21.63
July-September.....	30.80	29.32	27.38	25.40	21.94	20.06
October-December.....	31.40	29.01	27.18	23.20	18.88	26.05
1932: ¹						
January-March.....		27.75	26.93		17.94	21.12

¹ Preliminary.

CHART O



AVERAGE FOREIGN UNIT IMPORT VALUES, BY QUARTERS

Unbleached sulphite.—The largest single item in imports is unbleached sulphite pulp, and Sweden is much the largest source. The contract prices for European sulphite fell during each quarter of 1930 and also during each quarter of 1931, the most marked changes having taken place in the third and fourth quarters of each year. As shown elsewhere (Table 33) exceptionally large contracts for sulphite pulp were let by the importers during the last quarter of 1931. The average price during that quarter was about \$4.80 lower than in the third quarter, a decrease of about 12 per cent. The decrease between the second and third quarters had been somewhat over 4 per cent. The more conspicuous of the downward movements in contract prices are approximately paralleled by declines in the next following quarter for the average unit values of the imports from Sweden. The average import value of imports from Sweden for the fourth quarter of 1930 showed a decrease of about 8 per cent as compared with the third quarter, and the first quarter of 1931 showed a further decrease of about 6 per cent. During the fourth quarter of 1931 the average unit value of imports from Sweden was about 6 per cent less than during the third quarter, and during the first quarter of 1932 there was a further drop of about 9 per cent.

Bleached sulphite.—Bleached sulphite is much less important in imports than unbleached. Much the larger part of the total imports comes from Canada and the imports from Germany during the last three years have been about equal to those from Sweden. Nevertheless, since the contract data relate only to European pulp, Table 41 shows a comparison between the average unit value of imports from Sweden and the contract prices. (Unit values of imports from Canada and Germany are shown in Table 42 below.)

The movement of the contract prices for bleached sulphite has been roughly parallel to the movement for unbleached sulphite. Marked declines occurred in the last two quarters of 1930 and also in the last two quarters of 1931. During the third quarter of 1931 the average was nearly 10 per cent lower than during the second quarter, and the fall during the fourth quarter was about 12 per cent. Following these changes in contract prices there was a drop of about 11 per cent in the average unit value of bleached sulphite imported from Sweden during the fourth quarter of 1931 as compared with the third quarter, and a further drop of about 18 per cent in the first quarter of 1932. It should be noted that the contracts for European bleached sulphite during the last quarter of 1931 were larger than during any previous quarter since the beginning of 1930, and much larger than during the third quarter of 1931.

Unbleached sulphate.—Next to unbleached sulphite, unbleached sulphate is the most important item in the imports of wood pulp. Roughly, four-fifths of the total importation during the last three years has been from Sweden. The movement of the prices of this class of pulp, as shown in the contracts of importers of European pulp and in the average unit prices of the pulp actually received from Sweden, has been decidedly different from that of the two classes of

sulphite pulp. A marked decline in both series of data for unbleached sulphate occurred during the early part of 1930 and again toward the close of 1930 or early in 1931, whereas very little change appears in the average prices of importers' contracts between the fourth quarter of 1930 and the end of 1931, and very little change appears in the average unit values of imports from Sweden since the second quarter of 1931. In this connection it should be noted (see Table 33) that the contracts let for European unbleached sulphate during the last quarter of 1931 were exceptionally small in quantity, although the actual imports during the late fall and winter months were large.

Mechanical pulp.—The contract prices and import values of unbleached mechanical pulp also show a movement materially different from those for the two kinds of sulphite pulp. This may be due to the fact that the great bulk of the imports of mechanical pulp comes from Canada, the European country most important in the supply of this kind of pulp being Finland, the average unit value of imports from which is shown in Table 41. (For average value of imports from Canada see Table 43.) The contract prices show a decline of about 8 per cent between the first quarter and the last quarter of 1930, a further drop of about 10 per cent for the first quarter of 1931, and relatively little change thereafter until the fourth quarter, when the average was about 9 per cent lower than in the third quarter.

There was no such harmony between the movement of the average unit values of imports from the principal European competing country and the average contract prices for European pulp in the case of mechanical pulp as appears in the case of the various classes of chemical pulp. The average unit values for imports from Finland were decidedly higher during the last two quarters of 1931 than at any previous time during 1930 or 1931, whereas the drop in the first quarter of 1932 was approximately 20 per cent, leaving the average, however, at about the same level as during the early part of 1931. The quantities involved in the imports of mechanical pulp from Finland are relatively small, and there may be variations in grade which account for these apparent irregularities in the price movement.

AVERAGE FOREIGN UNIT VALUES OF IMPORTS FROM PRINCIPAL COUNTRIES

Table 42 shows for the three principal kinds of chemical pulp imported from foreign countries the average unit value of the imports during each quarter from all countries combined and from each of the principal countries supplying the given kind of pulp. The table also shows relatives based on the average unit values of 1930 taken as 100. Table 42 presents similar data for unbleached mechanical pulp. The more important movements indicated by those tables have already been discussed in connection with Table 41.

TABLE 42.—Average foreign unit value of imports of chemical pulp from the principal countries, by quarters

[The relative numbers are based on the average value for 1930 as 100]

Year and quarter	Sulphite, unbleached							
	Total		Sweden		Finland		Canada	
	Unit value	Relative	Unit value	Relative	Unit value	Relative	Unit value	Relative
1930								
First quarter.....	\$46.12	103	\$47.05	103	\$45.57	106	\$43.43	103
Second quarter.....	45.48	102	47.49	104	44.27	103	42.72	101
Third quarter.....	45.32	102	46.47	102	42.07	98	43.03	102
Fourth quarter.....	41.58	93	42.62	93	40.84	95	38.88	92
1931								
First quarter.....	39.90	89	40.21	88	39.30	91	39.75	94
Second quarter.....	37.29	94	40.00	87	32.68	76	38.28	91
Third quarter.....	35.04	85	38.25	84	40.44	94	36.38	86
Fourth quarter.....	35.56	80	35.98	79	39.60	92	35.41	84
1932 ¹								
First quarter.....	32.81	74	32.90	72	36.02	84	32.33	77
Quantity imported in 1931 (tons).....	600,000		337,000		109,000		99,000	
Year and quarter	Sulphite, bleached							
	Total		Canada		Sweden		Germany	
	Unit value	Relative	Unit value	Relative	Unit value	Relative	Unit value	Relative
1930								
First quarter.....	\$65.93	105	\$66.94	103	\$60.46	108	\$64.39	103
Second quarter.....	63.41	101	66.36	103	61.72	101	64.41	103
Third quarter.....	62.52	99	63.74	99	62.75	102	62.71	100
Fourth quarter.....	59.23	94	61.32	95	57.20	93	58.51	93
1931								
First quarter.....	55.19	88	60.92	94	45.84	75	56.19	90
Second quarter.....	55.61	88	58.48	90	50.21	82	53.94	86
Third quarter.....	51.75	82	53.26	82	48.83	80	51.78	83
Fourth quarter.....	46.47	74	50.93	79	43.68	71	46.15	74
1932 ¹								
First quarter.....	43.03	68	49.17	76	35.73	58	41.65	67
Quantity imported in 1931 (tons).....	354,000		207,000		55,000		53,000	
Year and quarter	Sulphate, unbleached							
	Total		Sweden		Finland		Canada	
	Unit value	Relative	Unit value	Relative	Unit value	Relative	Unit value	Relative
1930								
First quarter.....	\$45.20	110	\$43.13	114	\$40.32	106	\$54.48	99
Second quarter.....	44.85	109	42.34	112	40.91	108	53.94	98
Third quarter.....	39.45	96	36.37	96	32.71	86	55.38	100
Fourth quarter.....	35.55	86	31.99	85	35.10	92	57.74	105
1931								
First quarter.....	36.58	89	33.42	88	29.30	77	57.02	103
Second quarter.....	32.52	79	29.50	78	27.41	72	53.72	97
Third quarter.....	29.32	71	27.38	72	29.77	78	55.18	100
Fourth quarter.....	29.01	71	27.18	72	29.83	79	47.17	85
1932 ¹								
First quarter.....	27.75	68	26.93	71	29.26	77	41.55	75
Quantity imported in 1931 (tons).....	386,000		282,000		60,000		36,000	

¹ Preliminary.

CHART P

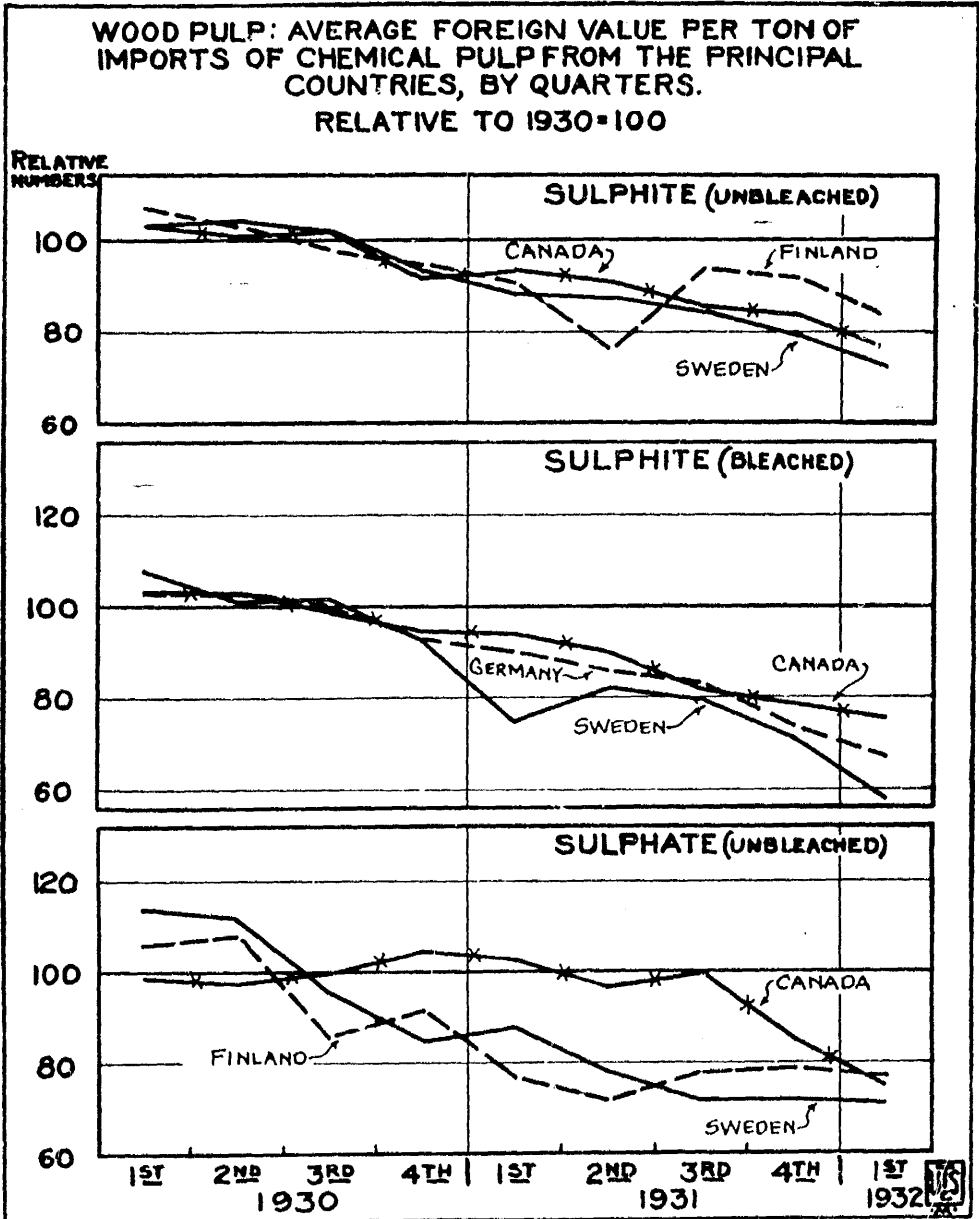


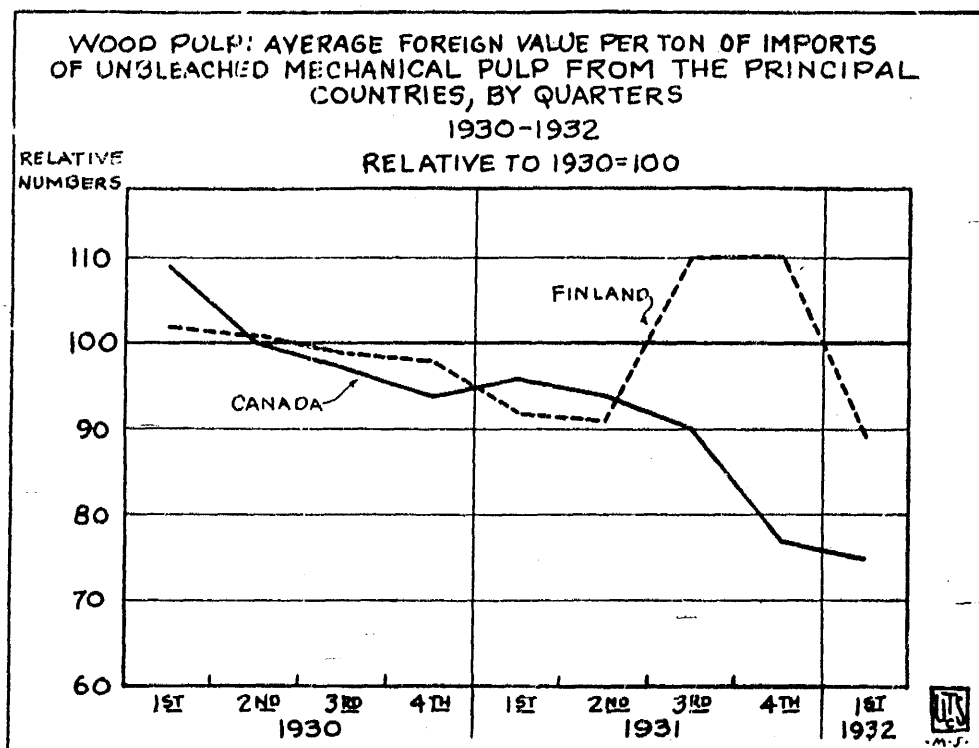
TABLE 43.—Average foreign unit value of imports of unbleached mechanical pulp from the principal countries, by quarters

[Per ton of 2,000 pounds. Relatives are on the basis of 1930 average as 100]

Years and quarter	Total		Canada		Finland	
	Unit value	Relative	Unit value	Relative	Unit value	Relative
1930						
First quarter.....	\$26.99	113	\$26.11	109	\$24.19	102
Second quarter.....	24.02	100	21.09	100	23.79	101
Third quarter.....	23.02	96	23.23	97	23.29	99
Fourth quarter.....	22.59	94	22.62	94	23.16	98
1931						
First quarter.....	22.97	95	23.05	96	21.70	92
Second quarter.....	22.49	94	22.66	94	21.53	91
Third quarter.....	21.94	92	21.61	90	23.08	110
Fourth quarter.....	18.88	79	18.56	77	26.05	110
1932						
First quarter.....	17.94	75	17.91	75	21.12	89
Quantity imported in 1931 (tons) ¹	211,000		181,000		12,400	

¹ Includes bleached, small in quantity.

CHART Q



AVERAGE PRICES OF SALES MADE BY PULP MILLS AND OF PURCHASES BY PAPER MILLS, BY QUARTERS

The commission received from a large number of pulp mills in the United States data showing for each month the shipments of pulp by quantity and the value thereof f. o. b. shipping plant. Distinction was made between shipments to affiliated paper mills and those to unaffiliated mills. Average unit values of these shipments have been computed. It is believed that greater significance attaches to the

average values for the shipments to unaffiliated paper mills than for those to mills under the same control. Although a pulp mill shipping to an affiliated concern may charge the prevailing market price, it may, on the other hand, make the charge on the basis of cost of production or on the basis of some arbitrary figure.

The average unit values for any given month of the product shipped to unaffiliated paper mills are, as already stated, affected by contracts made in earlier months.

Table 44 shows, by quarters, from 1929 to 1931, the average unit prices received by pulp mills for the different principal kinds of pulp. It also shows corresponding average prices for the purchases of paper mills (a) from unaffiliated domestic pulp mills and (b) from foreign sources. As in the case of the pulp-mill data, the figures for average values of purchases from unaffiliated plants are presumably more significant than those for the product received from affiliated concerns. For reasons already set forth (see p. 64), the average prices reported by the pulp mills are not directly comparable with the average prices reported by the paper mills for domestic pulp, but the trends of the two series should be approximately comparable.

TABLE 44.—Average prices of sales made by pulp mills and of purchases by paper mills reporting to the Tariff Commission, by quarters

- A. Average for domestic sales to unaffiliated paper mills by pulp mills reporting.
 B. Average for purchases by reporting paper mills from unaffiliated domestic pulp mills.
 C. Average for purchases by reporting paper mills from unaffiliated foreign pulp mills.

[Per ton of 2,000 pounds]

Year and quarter	Sulphite, unbleached			Sulphite, bleached			Sulphate, unbleached		
	A	B	C	A	B	C	A	B	C
1929									
First quarter.....	\$52.32	\$54.86	\$56.72	\$69.46	\$91.97	\$77.94	\$49.43	\$50.44	\$58.17
Second quarter.....	52.63	54.28	56.25	68.49	91.86	79.52	50.61	49.91	55.45
Third quarter.....	52.69	56.29	55.71	67.67	88.76	78.74	45.76	49.40	63.95
Fourth quarter.....	52.82	55.82	56.43	67.01	89.59	76.93	41.64	50.07	53.23
1930									
First quarter.....	52.27	50.64	57.06	65.59	85.05	75.94	50.19	47.23	51.79
Second quarter.....	50.33	56.02	56.86	62.01	84.71	72.42	45.81	44.56	48.86
Third quarter.....	46.22	50.95	55.24	58.18	79.01	70.27	50.00	42.14	43.46
Fourth quarter.....	43.22	46.99	52.22	54.07	74.11	67.35	43.98	45.17	40.82
1931									
First quarter.....	41.66	43.96	50.59	51.43	70.01	63.89	33.80	42.97	38.89
Second quarter.....	42.04	43.83	48.66	50.90	67.58	60.77	37.10	39.28	37.62
Third quarter.....	41.22	44.23	47.08	48.65	63.02	57.54	19.87	34.82	34.84
Fourth quarter.....	38.62	43.45	44.63	46.22	60.05	55.47	24.98	31.75	34.37

Year and quarter	Soda, bleached			Mechanical, unbleached		
	A	B	C	A	B	C
1929						
First quarter.....	\$63.56	\$67.36	\$69.19	\$31.86	\$33.24	\$33.30
Second quarter.....	63.58	67.36	63.67	31.42	32.56	34.49
Third quarter.....	63.60	67.44	66.24	30.91	31.95	33.94
Fourth quarter.....	63.43	66.78	68.09	30.56	31.07	35.17
1930						
First quarter.....	61.86	67.04	66.64	31.30	30.18	36.45
Second quarter.....	60.65	64.28	62.03	31.78	29.80	34.81
Third quarter.....	60.10	64.27	62.75	31.17	29.68	34.12
Fourth quarter.....	57.78	63.00	62.99	31.23	25.20	34.99
1931						
First quarter.....	54.38	59.64	61.16	30.03	24.74	33.84
Second quarter.....	55.45	58.83	60.92	29.76	25.24	34.09
Third quarter.....	54.69	57.32	69.44	27.24	25.12	32.45
Fourth quarter.....	48.81	53.78	56.36	26.74	24.27	31.35

The movements of these average prices received by pulp mills and prices paid by paper mills for both domestic and foreign pulp are in a broad way parallel with those already presented for average unit values of imports and contract prices made by importers. For each class the average values reported both by the pulp mills and the paper mills were lower in the fourth quarter of 1931 than at any other time during the past three years. The extent of the decline shown for this quarter as compared with the third quarter of 1931 varies from 1 or 2 per cent up to 7 or 8 per cent. In the case of all kinds of pulp, however, there had already been a marked decline in prices before the last quarter of 1931, and in a number of cases the decline shown during some previous quarter, as compared with that immediately preceding it, was greater than the decline in the last quarter of 1931.

The comparison for a given month or quarter between the average price paid by the paper mills for a given kind of domestic pulp and the average for the same kind of foreign pulp does not necessarily indicate with certainty whether the prevailing market prices of the one were higher or lower than of the other. The relationship of the two may be the result of differences in grades, in the geographical location of the reporting mills, and in the time at which contracts for the pulp were made.

It will be seen that throughout the period covered by the table the average unit price paid by the reporting paper mills for foreign unbleached sulphite pulp was somewhat higher than for the domestic purchased from unaffiliated mills. The opposite was the case, however, with respect to bleached sulphite. For unbleached sulphate the prices paid by the paper mills were consistently higher for the foreign product than for the domestic during 1929 and the early part of 1930, whereas the relationship during the latter part of 1930 and during 1931 was less stable, the one being higher in price during certain periods and the other higher during other periods. In the case of ground wood, unbleached, the prices paid for the foreign product were throughout higher than for the domestic, the difference being accentuated during 1931.

MONTHLY STATISTICS OF PRICES

AVERAGE FOREIGN UNIT VALUES OF IMPORTS, BY MONTHS

Table 45 shows, by months, the average foreign unit values of the several kinds of pulp imported. Tables 46 and 47 show similar data for the imports from each principal country. The general trends revealed by these monthly data have already been brought out in the discussion of the quarterly averages. For some kinds of pulp, in certain months, movements up or down appear which are apparently inconsistent with the general trends; these may be due to more or less accidental causes, such as an unusually large proportion of imports under contracts made some time previously, or such as the shipment of pulp of an unusually high or low grade. These irregularities are largely smoothed out in the quarterly averages.

TABLE 45.—Wood pulp: Average foreign unit value of imports from all countries, by months

[Per ton of 2,000 pounds]

Year and month	Average value per ton				Relative to average for 1930 as 100			
	Sulphite		Sulphate, un-bleached	Mechanically ground, un-bleached	Sulphite		Sulphate, un-bleached	Mechanically ground, un-bleached
	Un-bleached	Bleached			Un-bleached	Bleached		
1929								
January.....	\$46.33	\$65.87	\$49.30	\$22.64	104	105	120	95
February.....	45.82	67.67	49.62	24.60	103	108	121	103
March.....	40.57	66.64	50.98	23.76	91	106	124	99
April.....	42.93	69.00	49.49	22.35	96	111	120	94
May.....	45.07	66.29	49.44	20.84	101	106	120	87
June.....	44.98	68.93	47.04	22.48	101	110	114	94
July.....	45.64	68.79	46.35	22.87	102	109	113	96
August.....	45.50	67.02	47.20	22.00	102	107	115	92
September.....	45.66	68.86	46.64	23.33	102	110	113	98
October.....	45.23	68.04	47.27	21.84	101	108	115	91
November.....	44.46	66.99	47.24	24.70	100	107	115	103
December.....	44.90	67.54	45.54	23.66	101	107	111	99
1930								
January.....	46.00	66.54	46.72	26.39	103	106	114	110
February.....	46.24	61.73	43.41	24.88	104	103	106	104
March.....	46.16	66.71	46.71	26.19	103	106	114	110
April.....	45.27	64.21	47.30	22.82	101	102	115	95
May.....	46.30	64.64	43.15	24.83	104	103	105	104
June.....	45.03	61.61	44.71	24.58	101	98	109	103
July.....	45.86	62.70	42.14	25.20	103	100	103	105
August.....	44.85	63.45	39.00	21.91	100	101	95	92
September.....	44.30	61.46	37.97	22.51	99	98	92	94
October.....	41.73	62.21	38.53	23.15	94	99	94	97
November.....	41.55	57.46	34.51	23.43	93	91	84	98
December.....	41.50	58.02	35.09	21.27	93	92	85	89
1931								
January.....	41.16	52.52	35.71	23.78	92	84	87	99
February.....	38.02	56.17	36.56	24.44	85	89	80	102
March.....	39.46	57.36	39.46	20.74	88	91	96	87
April.....	36.40	56.88	37.71	21.35	82	91	92	89
May.....	38.17	55.84	32.49	24.07	86	89	79	101
June.....	37.29	54.08	30.12	23.08	84	86	73	97
July.....	37.28	55.35	28.01	24.67	84	88	68	103
August.....	38.28	50.46	27.62	21.38	80	80	67	89
September.....	38.61	50.35	30.54	20.05	87	80	74	84
October.....	37.17	48.42	30.47	19.37	83	77	74	81
November.....	36.84	48.78	28.65	17.48	83	78	70	73
December.....	35.85	47.97	28.47	19.73	80	76	69	83
1932 ¹								
January.....	32.93	43.43	27.63	18.11	74	69	67	76
February.....	33.25	43.04	27.32	17.37	75	70	66	73
March.....	31.43	41.52	29.25	18.57	70	66	71	78

¹ Based on preliminary figures.

TABLE 46.—Wood pulp: Average foreign unit value of imports from each principal country, by months

[Per ton of 2,000 pounds]

Year and month	Sulphite, unbleached			Sulphite, bleached			Sulphate, unbleached			Mechanical, unbleached	
	Canada	Sweden	Finland	Canada	Sweden	Germany	Canada	Sweden	Finland	Canada	Finland
1930											
January.....	\$41.73	\$47.18	\$44.66	\$67.66	\$67.71	\$65.04	\$54.96	\$44.98	\$40.23	\$26.51	\$24.07
February.....	44.39	46.72	46.38	65.59	64.77	64.04	54.08	41.46	43.37	25.30	24.30
March.....	44.32	47.79	45.02	67.75	67.05	64.38	54.63	44.43	37.33	26.47	24.24
April.....	43.38	47.60	43.72	65.96	64.50	63.83	56.50	44.11	39.54	22.78	23.77
May.....	44.34	47.86	44.22	66.86	63.70	64.92	52.90	38.78	42.63	25.09	24.05
June.....	40.77	47.23	44.85	66.33	58.29	65.07	51.99	43.81	39.44	24.67	23.57
July.....	43.36	47.17	44.69	64.06	63.12	60.63	55.48	38.90	34.52	25.36	23.54
August.....	44.55	46.32	39.52	65.11	61.63	64.78	54.05	37.27	32.17	22.00	22.88
September.....	41.03	45.94	42.25	62.10	63.66	62.54	56.80	33.57	32.39	22.86	25.66
October.....	40.05	41.34	42.97	62.44	61.03	62.87	58.10	31.97	41.73	23.21	22.88
November.....	36.24	43.86	40.24	59.54	53.44	56.27	57.43	31.42	32.64	23.54	22.29
December.....	41.58	42.06	40.06	61.54	57.60	56.31	57.72	32.48	33.55	21.21	24.31
1931											
January.....	40.90	41.12	40.57	61.12	44.55	60.82	53.23	33.33	35.60	24.02	20.56
February.....	38.65	37.79	36.57	61.96	46.40	51.07	60.99	33.59	26.96	24.46	23.69
March.....	39.94	43.20	38.91	59.88	53.85	56.36	56.57	32.81	29.36	20.74	21.46
April.....	37.47	44.21	31.46	59.54	53.96	55.52	56.79	31.41	26.13	21.54	21.39
May.....	38.84	39.76	34.52	59.25	48.72	52.68	51.58	29.35	23.08	24.10	23.04
June.....	38.62	39.34	32.55	56.74	47.99	53.40	47.24	29.21	29.96	23.37	.....
July.....	39.00	36.88	39.09	57.00	53.76	51.89	54.66	26.88	27.95	24.47	27.23
August.....	36.06	38.61	42.05	51.15	47.52	51.84	52.86	28.46	27.48	21.15	25.00
September.....	31.64	39.28	40.55	52.33	47.29	51.66	56.82	26.85	33.60	19.79	25.62
October.....	34.92	36.88	40.93	53.04	41.71	43.85	42.57	27.60	28.09	19.27	23.67
November.....	35.21	35.87	40.08	49.62	46.03	48.92	55.21	26.82	30.60	16.59	27.05
December.....	36.31	35.22	36.77	50.72	42.23	48.01	51.51	27.49	29.72	19.73	23.93
1932 ¹											
January.....	33.56	33.22	33.59	40.49	37.14	45.47	38.48	27.23	28.85	18.42	24.22
February.....	32.49	33.21	37.19	51.34	36.22	40.67	41.19	26.50	29.21	16.70	20.45
March.....	31.24	28.60	37.14	46.75	32.04	38.22	44.25	27.09	29.73	18.75	21.92

¹ Based on preliminary figures.

TABLE 47.—Wood pulp: Average foreign unit value of imports from each principal country relative to average for 1930, by months

[Relative to average for 1930 as 100]

Year and month	Sulphite, unbleached			Sulphite, bleached			Sulphate, unbleached			Mechanical, unbleached	
	Canada	Sweden	Finland	Canada	Sweden	Germany	Canada	Sweden	Finland	Canada	Finland
1930											
January.....	90	103	104	105	106	104	100	118	106	110	102
February.....	105	102	108	101	105	102	98	110	114	105	103
March.....	105	104	104	105	109	103	99	118	98	110	103
April.....	103	104	101	102	105	102	103	117	104	95	101
May.....	105	105	103	103	104	104	96	103	112	104	102
June.....	97	103	104	103	95	104	94	116	104	103	100
July.....	103	103	104	99	103	97	101	103	91	105	100
August.....	106	101	92	101	100	103	98	101	95	92	37
September.....	97	100	98	96	104	100	103	99	85	95	109
October.....	95	90	100	97	99	100	105	85	110	97	97
November.....	86	96	93	92	87	90	104	83	86	98	94
December.....	99	92	93	95	94	99	105	89	88	88	103
1931											
January.....	97	90	94	95	73	97	96	88	94	100	87
February.....	92	83	85	96	76	82	111	89	71	102	100
March.....	95	94	90	95	88	90	103	87	77	86	91
April.....	89	97	73	92	88	89	103	83	69	90	91
May.....	92	87	80	92	79	84	93	78	63	100	98
June.....	92	86	76	88	78	85	86	77	79	67	73
July.....	90	81	91	88	88	83	99	71	74	102	115
August.....	96	84	98	79	77	83	96	75	72	88	106
September.....	82	86	94	81	77	82	103	71	88	82	108
October.....	82	81	95	82	68	70	77	73	74	80	100
November.....	83	78	93	77	75	78	100	71	81	69	114
December.....	86	77	85	78	69	77	93	73	78	82	101
1932 ¹											
January.....	80	73	78	77	60	72	70	72	76	77	102
February.....	77	73	86	79	59	65	75	70	77	69	87
March.....	74	68	86	72	52	61	80	72	78	78	93

¹ Based on preliminary figures.

AVERAGE PRICES OF SALES MADE BY PULP MILLS AND OF PURCHASES
BY PAPER MILLS, BY MONTHS

Table 48 shows for each month from 1929 to 1931 the average unit prices of the sales by pulp mills to unaffiliated domestic paper mills and of the purchases by paper mills from unaffiliated domestic pulp mills and from foreign sources. As in the case of average unit values of imports, irregular movements occasionally appear in these monthly data, which are presumably to be explained by exceptional conditions as regards the make-up of the sales or the purchases.

TABLE 48.—*Wood pulp: Average prices of sales made by pulp mills and of purchases by paper mills reporting to the Tariff Commission, by months*

A. Average for domestic sales to unaffiliated paper mills by pulp mills reporting.
B. Average for purchases by paper mills from unaffiliated domestic pulp mills.
C. Average for purchases by paper mills from unaffiliated foreign pulp mills.

[Per ton of 2,000 pounds]

Year and month	Sulphite, unbleached			Sulphite, bleached			Sulphate, unbleached		
	A	B	C	A	B	C	A	B	C
1929									
January.....	\$52.11	\$54.26	\$56.08	\$60.91	\$64.67	\$74.94	\$49.30	\$43.83	\$54.22
February.....	52.24	55.86	57.32	69.22	90.04	79.25	49.47	59.57	56.75
March.....	52.69	54.40	56.73	69.30	90.39	80.15	49.48	50.79	64.94
April.....	52.27	54.76	56.22	69.54	91.44	80.74	48.81	50.54	55.41
May.....	53.00	54.37	57.10	69.31	95.30	79.01	51.54	49.99	56.07
June.....	52.65	53.72	55.49	66.92	88.53	78.95	50.68	49.04	54.92
July.....	52.84	56.85	55.78	66.81	88.83	79.16	46.01	49.91	54.44
August.....	52.62	56.89	55.73	68.32	89.42	79.20	45.69	49.06	53.47
September.....	52.62	55.16	55.65	67.98	88.60	77.86	45.61	49.13	53.81
October.....	52.75	54.21	56.55	67.20	82.04	77.33	46.36	50.55	52.91
November.....	52.72	56.24	58.04	66.40	91.90	77.39	42.56	48.82	53.38
December.....	53.00	57.00	56.63	67.54	88.85	76.21	39.33	50.70	53.41
Average.....	52.63	55.38	56.27	68.15	90.56	78.29	46.70	49.98	55.18
1930									
January.....	51.54	55.97	56.57	66.18	77.80	77.57	54.92	47.81	52.70
February.....	53.26	57.04	56.96	65.81	83.46	76.04	51.16	47.21	52.80
March.....	52.19	56.07	57.62	64.87	84.07	74.67	43.40	46.60	49.84
April.....	50.44	55.25	56.67	62.38	86.96	73.23	46.69	44.56	49.41
May.....	50.27	57.10	56.96	62.83	84.14	72.30	45.15	44.11	49.41
June.....	50.29	55.66	56.99	60.64	82.85	71.70	50.00	45.27	48.17
July.....	46.34	52.18	55.82	59.35	81.00	70.70	50.00	41.99	43.62
August.....	46.06	50.10	55.93	58.38	78.63	70.49	50.00	42.56	43.05
September.....	46.20	50.02	54.26	57.02	77.53	69.52	50.00	41.97	43.90
October.....	44.94	48.29	53.20	54.89	77.01	69.31	42.40	44.96	42.07
November.....	43.87	46.09	52.58	54.43	71.75	66.20	.....	47.42	41.08
December.....	40.99	46.82	51.20	52.78	73.61	66.26	45.00	43.42	39.42
Average.....	48.44	53.21	55.34	59.84	80.95	71.72	48.36	45.74	45.76
1931									
January.....	42.22	45.43	61.66	62.72	71.75	65.10	.....	44.82	38.17
February.....	40.83	43.24	51.14	51.46	70.26	64.39	.....	41.57	39.32
March.....	42.14	43.34	49.18	50.48	68.57	62.82	33.88	42.18	39.09
April.....	41.97	43.65	49.00	51.14	70.02	62.20	37.02	39.48	38.42
May.....	42.54	42.00	49.05	50.59	65.42	60.48	37.19	37.32	38.36
June.....	41.65	43.90	48.13	50.99	67.61	59.84	.....	41.25	36.62
July.....	41.17	42.56	47.67	49.32	63.36	59.24	27.98	35.49	35.36
August.....	41.16	44.74	46.04	48.50	63.95	56.60	22.00	.....	34.65
September.....	41.34	45.29	47.45	48.24	61.89	56.94	18.37	33.50	34.30
October.....	38.80	47.05	44.89	47.34	60.49	56.78	25.53	32.47	34.85
November.....	38.72	41.04	44.79	46.94	60.46	54.78	24.62	30.00	33.99
December.....	38.31	41.87	44.22	44.34	59.13	54.63	25.24	.....	34.47
Average.....	41.03	43.84	47.69	49.62	65.44	59.57	25.46	40.86	36.31

TABLE 48.—Wood pulp: Average prices of sales made by pulp mills and of purchases by paper mills reporting to the Tariff Commission, by months—Continued

Year and month	Soda, bleached			Ground wood, unbleached		
	A	B	C	A	B	C
1929						
January.....	\$64.05	\$67.37	\$68.06	\$32.16	\$31.71	\$32.15
February.....	63.83	67.18	67.88	32.28	33.93	34.43
March.....	62.87	67.52	69.74	31.07	33.57	33.70
April.....	63.77	67.71	65.88	31.75	31.25	35.38
May.....	63.94	67.23	66.43	31.54	33.97	32.98
June.....	63.01	67.17	62.27	30.90	31.92	34.84
July.....	63.40	67.50	66.05	31.39	31.45	33.76
August.....	63.92	67.56	66.34	31.15	31.61	32.94
September.....	63.42	67.26	66.25	30.55	32.31	34.81
October.....	63.84	66.74	66.50	31.70	30.67	34.56
November.....	63.35	66.53	65.61	30.10	30.43	36.51
December.....	63.11	67.06	69.26	30.10	31.69	34.60
Total.....	63.54	67.24	66.76	30.98	32.00	34.17
1930						
January.....	62.42	67.18	68.00	30.86	31.60	36.00
February.....	61.18	67.08	64.65	31.30	27.33	37.73
March.....	61.85	66.86	66.45	31.81	30.65	36.16
April.....	60.77	63.76	62.21	30.94	30.34	34.76
May.....	60.90	65.25	59.18	31.95	28.59	34.62
June.....	60.22	63.78	63.28	32.33	29.89	34.95
July.....	59.54	64.43	62.80	31.24	31.34	34.73
August.....	60.31	65.00	63.53	30.99	28.96	34.77
September.....	60.42	63.26	62.45	31.29	28.53	33.23
October.....	59.32	63.95	62.82	31.22	25.65	34.14
November.....	58.30	64.45	66.38	30.96	23.50	34.57
December.....	54.91	60.19	62.73	31.51	26.77	35.82
Total.....	60.20	64.79	63.48	31.38	28.91	35.11
1931						
January.....	54.54	60.14	65.67	30.20	26.52	35.05
February.....	53.99	59.54	62.89	30.47	21.58	34.23
March.....	54.61	59.20	59.83	29.49	27.16	32.84
April.....	55.35	59.02	63.11	29.98	23.32	33.98
May.....	55.56	58.72	60.67	29.00	26.66	34.75
June.....	55.44	58.73	60.35	30.20	26.12	33.89
July.....	55.47	58.49	60.14	28.42	25.62	31.79
August.....	54.51	55.87	60.09	25.45	25.80	32.74
September.....	54.01	57.40	59.18	27.60	24.11	32.72
October.....	49.82	54.79	55.92	26.73	25.36	31.56
November.....	48.99	53.32	58.53	26.16	24.38	31.55
December.....	47.19	52.77	56.18	27.44	23.45	31.13
Total.....	53.70	57.98	59.64	28.65	24.82	33.06

CONTRACT PRICES OF EUROPEAN PULP FOR DELIVERY TO MILLS IN PRINCIPAL CONSUMING REGIONS OF THE UNITED STATES

Table 49 shows, by quarters, the average prices fixed in the contracts made by importers of European pulp for sales to mills in the Northeastern States and in the North Central States, these being the two regions into which the great bulk of the European pulp is delivered. The prices are shown for the three kinds of pulp most important in the importations from Europe. All these prices are as of Atlantic ports—that is to say, they do not include interior transportation to the paper mills. The prices of a given kind of pulp contracted for final delivery to the two regions shown should therefore be comparable as regards transportation costs. There may,

however, be some differences in the average quality of the pulp, which might account for minor variations in the price relationship.

The table shows, for each kind of pulp, prices on contracts for delivery to the two regions approximately similar throughout the period. There is no consistent excess for either region as compared with the other. In the case of unbleached sulphite the maximum difference between the average prices reported was in the fourth quarter of 1929, when the average for pulp intended for delivery to Region I was \$53.60 and that for pulp for Region II, \$51. During the fourth quarter of 1931 there was a difference in the same direction of \$1.80 per ton. On the other hand, during the second and third quarters of 1930 the prices of pulp for Region II were somewhat higher than those for Region I.

In the case of bleached sulphite pulp, which is of less importance than unbleached sulphite, the maximum difference in prices for the two regions appeared in the second quarter of 1930 when the average for Region I was \$69.20 and for Region II, \$62.40. On the other hand, in the last quarter of the same year the relationship was reversed, the average price for Region II being \$5.20 higher than for Region I. During most of the quarters covered by the table, the price differences for this kind of pulp were much less marked.

Throughout the period from the second quarter of 1929 to the second quarter of 1931, inclusive, prices of European unbleached sulphate pulp for delivery to Region II were lower than those for delivery to Region I, the maximum difference being in the second quarter of 1930 and amounting to \$3.80 per ton. On the other hand, there was practically no difference in average prices for such pulp as between the two regions during the third and fourth quarters of 1931.

TABLE 49.—Contract prices of European pulp at Atlantic ports for delivery to Regions I and II

[Price per ton of 2,000 pounds]

Period in which contracts were made	All contracts			Contracts for Region I ¹			Contracts for Region II ²		
	Sulphite, unbleached	Sulphite, bleached	Sulphate, unbleached	Sulphite, unbleached	Sulphite, bleached	Sulphate, unbleached	Sulphite, unbleached	Sulphite, bleached	Sulphate, unbleached
1929									
First quarter.....	\$51.80	\$74.40	\$50.20	\$51.60	\$74.40	\$50.20	\$52.60	\$73.00	\$50.60
Second quarter.....	51.20	75.60	48.80	54.00	75.80	49.60	54.60	73.20	47.60
Third quarter.....	55.20	76.40	48.80	55.20	75.60	49.20	55.00	80.60	48.00
Fourth quarter.....	52.80	71.40	49.60	53.60	71.00	53.20	51.00	72.60	48.80
1930									
First quarter.....	52.40	67.60	45.80	52.80	69.20	46.00	51.80	63.00	44.40
Second quarter.....	51.00	67.00	34.80	50.00	69.20	36.60	52.00	62.40	32.80
Third quarter.....	47.20	64.40	36.20	46.60	63.00	38.20	48.00	68.20	34.40
Fourth quarter.....	44.60	61.60	32.60	44.60	62.20	33.60	44.80	59.00	31.20
1931									
First quarter.....	43.60	61.40	31.80	43.80	61.20	32.80	43.00	63.60	31.40
Second quarter.....	43.20	58.20	31.80	43.60	58.00	32.40	42.00	61.60	30.20
Third quarter.....	41.40	52.80	30.80	41.20	52.40	31.00	41.60	52.80	31.20
Fourth quarter.....	36.60	46.80	31.40	37.20	47.20	30.80	35.40	46.00	30.40

¹ Includes Maine, New Hampshire, Vermont, Massachusetts, New York, Connecticut, Rhode Island, Pennsylvania, and New Jersey

² Includes Minnesota, Wisconsin, Michigan, Illinois, Indiana, and Ohio.

V. PULPWOOD

-- GENERAL INFORMATION

ANNUAL CONSUMPTION

The annual consumption of pulpwood in this country increased from 4,000,000 cords in 1909 to over 7,600,000 cords in 1929. Statistics of annual consumption of pulpwood for specified years are shown in Table 1.

TABLE 50.—*Pulpwood: United States consumption and average cost per cord f. o. b. mill, in specified years*

[Source: U. S. Department of Commerce, Bureau of the Census]

Year ¹	Quantity	Average unit cost f. o. b. mill	Year	Quantity	Average unit cost f. o. b. mill
	<i>Cords</i>	<i>Per cord</i>		<i>Cords</i>	<i>Per cord</i>
1909.....	4,001,607	\$8.62	1928.....	7,160,100	\$13.55
1919.....	5,477,832	15.95	1929.....	7,645,011	13.09
1926.....	6,766,007	14.96	1930.....	7,195,524	12.32
1927.....	6,760,935	14.14			

¹ Fiscal year for 1909; calendar year for remainder.

² Includes data for a small quantity of spent licorice root of no market value.

The proportion of total pulpwood used in 1930 in the manufacture of each kind of pulp is shown in Table 51.

TABLE 51.—*Pulpwood: Proportion of total used in the production of each kind of pulp, 1930*

[Source: U. S. Department of Commerce, Bureau of the Census]

Kind of pulp	Pulpwood consumed
	<i>Per cent</i>
Sulphite.....	43.6
Sulphate.....	23.5
Mechanical.....	20.4
Soda.....	11.8
Semi-chemical.....	.7
Total.....	100.0

PERCENTAGE OF CONSUMPTION SUPPLIED BY IMPORTS

Table 52 affords a comparison of consumption of pulpwood, as reported by pulp mills to the Bureau of the Census, with imports. The Bureau of the Census distinguishes imported from domestic wood in the consumption of certain species but not of all species. The imports in a given year may differ considerably from the consumption of imported pulpwood in that year, but the general trend is shown fairly by the table. There was some increase in the ratio of imports to total consumption between 1919 and 1923; no definite trend appeared from 1923 to 1930, but the ratio of imports fell sharply in 1931.

TABLE 52.—*Pulpwood: Comparison of imports with total consumption in specified years*

[Sources: Consumption, U. S. Department of Commerce, Bureau of the Census; imports, Bureau of Foreign and Domestic Commerce]

Year ¹	Total consumption	Imports	Ratio of imports to total consumption	Year	Total consumption	Imports	Ratio of imports to total consumption
	<i>Cords</i>	<i>Cords</i>	<i>Per cent</i>		<i>Cords</i>	<i>Cords</i>	<i>Per cent</i>
1909.....	4, 001, 607	727, 144	18	1927.....	6, 750, 935	1, 596, 787	24
1919.....	5, 447, 832	1, 047, 299	19	1928.....	7, 160, 100	1, 546, 355	22
1923.....	5, 872, 870	1, 348, 000	23	1929.....	7, 645, 011	1, 350, 722	18
1924.....	5, 768, 082	1, 279, 975	22	1930.....	7, 195, 524	1, 582, 201	22
1925.....	6, 093, 821	1, 483, 000	24	1931 ²	6, 975, 000	1, 021, 667	17
1926.....	6, 766, 007	1, 385, 619	20				

¹ Fiscal year for 1909; calendar year for remainder.² Consumption estimated from reports of pulp mills to the Tariff Commission.

CONSUMPTION OF THE SEVERAL SPECIES BY STATES

Statistics of the consumption of pulpwood are shown in Table 53 for the chief pulp-producing States by the principal species of wood used, domestic and imported, for 1919, 1927, 1929, and 1930. The proportion of imported pulpwood to all pulpwood consumed varies greatly in the different States; the imported represents over half of the consumption of the species distinguished in this respect in New York and Pennsylvania, but is insignificant in Minnesota and Washington. The proportion imported also varies greatly for the different species of wood, being relatively highest for spruce and poplar. Important species, chiefly of domestic origin, not shown in the table are Southern or yellow pine, jack pine, yellow poplar, white fir, tamarack, and gum.

TABLE 53.—Pulpwood: Consumption in principal States, by principal species, domestic and imported, for specified years

[Source: U. S. Department of Commerce, Bureau of the Census]

[Cords]

Principal States	Total, all species	Spruce		Hemlock		Poplar		Balsam fir ¹		Total specified species	
		Domestic	Imported	Domestic	Imported	Domestic	Imported	Domestic	Imported	Domestic	Imported
Maine:											
1919	1, 279, 852	1, 034, 540		10, 129		172, 936				1, 217, 605	
1927	1, 273, 288	796, 776	120, 097	43, 984		130, 887	29, 985	90, 630	24, 304	1, 071, 277	174, 386
1929	1, 311, 577	794, 446	138, 062	47, 301	7, 112	157, 519	34, 615	74, 409	18, 418	1, 073, 675	198, 237
1930	1, 203, 377	671, 875	184, 929	59, 049		132, 232	(²)	75, 935	23, 254	939, 091	208, 183
New Hampshire:											
1919	375, 597	262, 805		1, 172		68				264, 045	
1927	358, 376	255, 533	75, 505	1, 420				15, 283	4, 535	272, 236	80, 040
1929	378, 014	253, 183	102, 683	850				14, 895		268, 928	102, 683
1930	242, 756	176, 672	(²)	(²)		(²)		(²)		176, 672	
Vermont:											
1919 ³											
1927	31, 795	16, 822	3, 579			300		9, 030	2, 064	26, 132	5, 643
1929	25, 486	20, 796	800					3, 793	97	24, 589	897
1930	24, 224	17, 708	(²)			(²)		(²)	(²)	17, 708	
New York:											
1919	1, 055, 145	860, 972		55, 722		103, 653				1, 020, 347	
1927	872, 750	276, 820	399, 236	15, 047	410	34, 601	79, 792	7, 890	32, 312	334, 358	511, 760
1929	826, 312	308, 454	397, 065	8, 862	1, 875	46, 404	43, 065	2, 491	2, 776	364, 211	444, 771
1930	763, 461	341, 223	313, 787	(²)		(²)	(²)	(²)	(²)	341, 223	313, 787
Pennsylvania:											
1919	423, 822	121, 653		8, 737		45, 633				176, 023	
1927	398, 021	14, 156	133, 359	17, 668			76, 209		15, 212	31, 824	224, 780
1929	397, 690	10, 519	138, 735	19, 265		2, 251	78, 873	1, 657	12, 877	33, 692	230, 485
1930	352, 775	(²)	116, 281	(²)		(²)	(²)	(²)	(²)		116, 281
Michigan:											
1919 ⁴											
1927	351, 688	92, 609	74, 561	69, 417		300		36, 205	3, 969	198, 532	78, 530
1929	313, 477	91, 986	69, 840	43, 941		74		29, 522	11, 244	165, 473	81, 084
1930	279, 986	74, 223	71, 646	(²)		(²)		30, 167	11, 817	104, 390	83, 463
Minnesota:											
1919 ⁵											
1927	281, 156	198, 076				21, 424		21, 363		240, 863	
1929	266, 320	158, 248				47, 432		25, 791		231, 471	
1930	230, 471	123, 787				(²)		(²)		123, 787	

¹ Balsam fir not reported separately for the year 1919.

² Not reported separately in order to avoid disclosing data for individual establishments.

³ Not reported separately.

TABLE 53.—Pulpwood: Consumption in principal States, by principal species, domestic and imported, for specified years—Continued

[Source: U. S. Department of Commerce, Bureau of the Census]

[Cords]

Principal States	Total, all species	Spruce		Hemlock		Poplar		Balsam fir		Total specified species	
		Domestic	Imported	Domestic	Imported	Domestic	Imported	Domestic	Imported	Domestic	Imported
Wisconsin:											
1919 ¹	854, 195	282, 370		417, 868		2, 643				702, 881	
1927	1, 199, 615	254, 622	96, 996	584, 987		12, 884		112, 079		964, 572	96, 996
1929	1, 233, 962	247, 098	131, 710	475, 746		11, 559		164, 994		899, 396	131, 710
1930	1, 168, 789	243, 321	132, 243	398, 056		13, 516	(²)	167, 195	(²)	822, 098	132, 243
Virginia:											
1919 ³											
1927	316, 032	13, 954	35, 477	21, 372						35, 326	35, 477
1929	375, 179	2, 745	43, 613	7, 711						10, 456	43, 613
1930	378, 421	(²)	(²)	(²)							
Washington:											
1919 ³											
1927	445, 664	33, 435		147, 337	4, 638					180, 772	4, 638
1929	956, 132	58, 045	374	406, 669	6, 392					464, 714	6, 766
1930	1, 000, 001	52, 564		420, 341						472, 905	
Total, United States:											
1919 ⁴	5, 477, 832	3, 187, 214		795, 154		338, 380				4, 320, 748	
1927	6, 750, 935	2, 077, 893	948, 216	1, 138, 783	5, 048	220, 268	136, 695	305, 143	84, 087	3, 742, 087	1, 224, 046
1929	7, 645, 011	2, 074, 267	1, 020, 913	1, 039, 170	15, 379	329, 466	157, 829	317, 552	45, 412	3, 760, 455	1, 248, 533
1930	7, 195, 524	1, 844, 937	888, 255	1, 222, 961		291, 897	169, 092	330, 548	48, 935	3, 690, 343	1, 096, 282

¹ Not reported separately in order to avoid disclosing data for individual establishments.² Not reported separately.³ Domestic and imported not reported separately for the year 1919.⁴ Includes data for a small quantity of imported hemlock.

CONDITION OF PULPWOOD PURCHASED

Pulpwood before being converted into pulp must be stripped of its bark, otherwise the pulp would contain dark-colored particles and could be used only in the production of low-grade boards and papers. The bark may be removed from pulpwood by the producer or it may undergo this process after its purchase by the mill. The condition of the wood is referred to as rough (that is, with the bark intact), peeled, or rossed, the two latter terms referring to the process by which the bark is removed. Table 54 shows the quantity and average cost per cord of wood used in 1930 in the several States according to the condition in which purchased.

A considerable variation is shown in the average cost per cord of wood in the several States. Much of this difference is due to the species of wood used and, to a less degree, to the element of transportation cost. For instance, the table shows that in Arkansas, Mississippi, and Texas the average cost of rough wood in 1930 was \$5.50 per cord, while in New York it was \$18.36 per cord. The wood used in the Southern States is chiefly yellow pine, in part that derived from areas cut over for saw timber, and transported to relatively near-by pulp mills. The wood used in New York and other of the Northeastern States is largely spruce and its associated species, bought under strongly competitive conditions, and in some instances moved hundreds of miles by rail. In Washington the average cost of \$4.66 per cord, rough, represents principally hemlock obtained from the lower grade saw logs and sawmill waste.

TABLE 54.—Pulpwood used by domestic pulp mills: Quantity and average cost per cord, by condition in which purchased (domestic and imported combined), by States, 1930

[Source: U. S. Department of Commerce, Bureau of the Census]

State	Rough		Peeled		Rossed		Total	
	Quantity	Average cost f. o. b. mill	Quantity	Average cost f. o. b. mill	Quantity	Average cost f. o. b. mill	Quantity	Average cost f. o. b. mill
Individual States:	<i>Cords</i>	<i>Per cord</i>	<i>Cords</i>	<i>Per cord</i>	<i>Cords</i>	<i>Per cord</i>	<i>Cords</i>	<i>Per cord</i>
Louisiana.....	318,897	\$5.67	103,813	\$5.56			422,710	\$5.64
Maine.....	237,810	14.02	951,783	17.09	13,784	\$17.10	1,203,377	16.48
Massachusetts.....	659	14.56	42,741	17.14			43,400	17.10
Michigan.....	222,197	13.16	57,789	14.33			279,986	13.40
Minnesota.....	179,510	10.89	50,961	14.40			230,471	11.66
New Hampshire.....	52,358	15.94	190,191	19.40	207	16.00	242,766	18.65
New York.....	27,914	18.36	708,139	18.48	27,398	21.88	763,451	18.60
Pennsylvania.....	55,537	17.20	297,238	15.97			352,775	16.17
Tennessee.....	39,839	6.82	35,000	11.25			74,839	8.36
Vermont.....	12,174	13.47	11,493	16.22	557	24.00	24,224	15.02
Virginia.....	106,973	6.15	271,448	11.62			378,421	10.07
Washington.....	400,050	4.66	429,942	8.26	170,000	8.64	1,000,001	6.88
Wisconsin.....	867,003	12.80	226,693	12.21	75,093	11.20	1,168,789	12.59
Groups of States:								
Arkansas, Mississippi, and Texas.....	141,426	5.50					141,426	5.50
California and Oregon.....	48,229	4.93	157,647	9.28	145,177	8.70	351,053	8.44
Other States ¹	120,761	6.70					517,845	9.10
Total.....	2,831,346	9.95	397,084	9.86	432,216	10.24	3,700,652	12.32

¹ Includes Alabama, Delaware, District of Columbia, Maryland, New Jersey, North Carolina, Ohio, South Carolina, and West Virginia.

² Includes data for a small quantity of spent licorice root of no market value.

IMPORTS

Total imports in specified years

Imports of pulpwood increased from about 725,000 cords in 1909 to an average of 1,500,000 cords for the five years 1926-1930. The maximum was 1,597,000 cords in 1927. In 1931 imports, 1,022,000 cords, were approximately one-third smaller than in 1930. Spruce is the principal species imported, and "peeled" is the condition in which it is generally received.

Imports of pulpwood represent several methods of acquisition such as direct purchases from producers, intercompany transfers of wood cut from timberlands directly or indirectly held, or purchases from jobbers.

Statistics of total imports of pulpwood for specified years are shown in Table 55.

TABLE 55.—*Pulpwood: Total imports (for consumption) into the United States, in specified years*

	Quantity	Value	Unit value
	<i>Cords</i>		
1909 ¹	727,144	\$4,334,084	\$5.96
1919.....	1,047,299	10,458,755	9.99
1926.....	1,383,619	14,176,256	10.25
1927.....	1,596,787	16,484,345	10.32
1928.....	1,548,355	16,157,516	10.45
1929.....	1,350,722	14,508,949	10.81
1930.....	1,582,201	17,017,489	10.76
1931.....	1,021,667	11,211,298	10.97

¹ Fiscal year.

Imports by condition of wood.

Table 56 shows the quantity and value of spruce and other species of pulpwood imported, by condition of wood.

TABLE 56.—*Pulpwood: Imports (for consumption) by condition of wood, in specified years*

[Source: U. S. Department of Commerce, Foreign Commerce and Navigation of the United States]

Year	Spruce			Other species		
	Quantity	Value	Unit value	Quantity	Value	Unit value
	<i>Cords</i>			<i>Cords</i>		
1919.....	1 241,420	1 \$2,315,059	\$9.59			
1926.....	349,102	3,416,772	9.79	18,125	\$216,338	\$11.94
1927.....	405,568	3,994,316	9.85	25,435	243,556	9.59
1928.....	460,919	4,578,060	9.93	54,159	502,474	9.28
1929.....	369,140	3,771,339	10.22	32,369	310,173	9.58
1930.....	301,038	3,088,411	10.26	30,120	258,458	8.58
1931 ²	181,826	1,940,062	10.67	4,787	42,524	8.88
	PEELED					
1919.....	3 698,785	3 6,778,550	9.70			
1926.....	734,100	7,669,735	10.45	193,622	1,768,563	9.13
1927.....	878,865	9,170,660	10.43	195,465	1,843,202	9.43
1928.....	705,112	7,748,795	10.99	273,087	2,529,184	9.26
1929.....	729,792	8,492,674	11.64	202,111	1,828,436	9.05
1930.....	1,012,154	11,457,657	11.32	222,524	2,042,687	9.18
1931 ²	620,253	7,229,415	11.66	197,873	1,786,417	9.04
	ROSSSED					
1910.....	4 107,094	4 1,365,144	12.75			
1926.....	76,514	908,889	11.88	12,166	195,959	16.12
1927.....	86,254	1,144,609	13.27	5,200	88,002	16.92
1928.....	49,898	742,392	14.88	3,180	56,611	17.80
1929.....	17,162	195,007	11.36	148	1,320	8.92
1930.....	16,292	169,400	10.40	73	876	12.00
1931 ²	17,128	212,880	12.43			

¹ Total rough, all species. ² Preliminary. ³ Total peeled, all species. ⁴ Total rosssed, all species.

Imports by country of origin.

Until 1929 Canada was almost the sole country from which shipments of pulpwood were made to the United States. Imports from Russia began in 1929 and in the following year were in considerable volume, but declined in 1931. Small quantities of pulpwood were received in 1929 and 1930 from Newfoundland and Labrador, but there was none in 1931. Imports of pulpwood by countries and condition of the wood in which received are shown in Tables 57 and 58.

TABLE 57.—*Pulpwood: Imports (general) into the United States, by country of origin*

Country	Quantity (in cords)			Value (in thousands)			Average unit value		
	1929	1930	1931	1929	1930	1931	1929	1930	1931
Canada.....	1,337,019	1,393,456	969,371	\$14,412	\$15,230	\$10,466	\$10.78	\$10.97	\$10.80
Russia.....	6,481	174,086	52,243	101	1,580	744	15.58	9.04	14.25
Newfoundland and Labrador.....	7,222	14,059	—	86	157	—	11.91	11.17	—
Germany.....	—	—	53	—	—	1	—	—	13.34
Total.....	1,350,722	1,582,201	1,021,667	14,599	17,017	11,211	10.81	10.76	10.97

TABLE 58.—*Pulpwood: Imports (general) by country of origin and condition of wood*

[Source: U. S. Department of Commerce, Foreign Commerce and Navigation of the United States]

Country	Rough			Peeled			Rossed		
	Quantity	Value	Unit value	Quantity	Value	Unit value	Quantity	Value	Unit value
1929	<i>Cords</i>			<i>Cords</i>			<i>Cords</i>		
Canada.....	398,146	\$4,027,531	\$10.12	921,564	\$10,187,742	\$11.05	17,310	\$196,327	\$11.34
Russia.....	—	—	—	7,222	86,136	11.93	—	—	—
Newfoundland and Labrador.....	3,364	53,981	16.05	3,117	47,232	15.15	—	—	—
Total.....	401,509	4,081,512	10.17	931,903	10,321,110	11.06	17,310	196,327	11.34
1930									
Canada.....	331,158	3,346,869	10.11	1,063,722	11,834,559	11.23	8,576	98,945	11.54
Russia.....	—	—	—	160,897	1,509,073	9.04	7,789	71,331	9.16
Newfoundland and Labrador.....	—	—	—	14,059	166,712	11.15	—	—	—
Total.....	331,158	3,346,869	10.11	1,234,678	13,500,344	10.93	16,365	170,276	10.40
1931									
Canada.....	186,613	1,982,586	10.62	769,315	8,323,211	10.82	13,433	160,380	11.93
Russia.....	—	—	—	48,558	691,914	14.25	3,685	52,500	14.25
Germany.....	—	—	—	53	707	13.34	—	—	—
Total.....	186,613	1,982,586	10.62	817,926	9,015,832	11.02	17,118	212,880	12.43

THE DOMESTIC PULPWOOD INDUSTRY

Estimates of domestic production.

Statistics of pulpwood production are not compiled by the Bureau of the Census because of the very large number of small producers who would have to be reached for reports and because the records of the producers in many instances are inadequate. Consumption

data are more readily obtained because of the relatively small number of units utilizing pulpwood and the fact that most pulp mills have satisfactory records. For a period of years domestic production of pulpwood would be approximately the same as the consumption of domestic pulp reported by the pulp mills. During a time when pulp production lags the production of pulpwood may be in excess of such consumption and so continue until adjustment of production to a lower level is made. On the other hand, an increase in pulp production may not be reflected in a stimulus of pulpwood production until a cutting season beginning possibly as much as 10 months later.

The Forest Service has estimated the average annual cut of pulpwood by regions for 1925-1929, as shown in Table 59. The estimates do not include the cut on the Pacific coast. The estimated average annual total cut, exclusive of the Pacific coast region, was in excess of 5,300,000 cords, of which about two-fifths was estimated to be the product of trees less than saw timber size cut from saw timber and cordwood areas.

TABLE 59.—*Pulpwood: Estimated annual cut, by regions, average, 1925-1929*

[Source: U. S. Department of Agriculture, Forest Service]

[Cords]

Item	New England States	Middle Atlantic States	Lake States	Southern States ¹	Other States	Total
Softwoods.....	1,291,000	360,000	1,560,000	825,000	690,000	4,726,000
Hardwoods.....	164,000	177,000	39,000	103,000	127,000	610,000
Total.....	1,455,000	537,000	1,599,000	928,000	817,000	5,338,000

¹ Alabama, Arkansas, Florida, Georgia, Louisiana, Mississippi, North Carolina, Oklahoma, South Carolina, Texas, and Virginia.

Pulpwood resources.

An estimate of the timber stand in the United States that might be regarded as a potential supply of pulpwood can not be made with any degree of accuracy. Species long regarded as unsuitable for conversion into pulp are to-day actually being so utilized. Examples of additional species found to be adapted to pulping are southern yellow pine, which is now being extensively used in the manufacture of pulp by the sulphate process, and western hemlock, which is being widely used by the mills in Washington and Oregon in the production of pulp by the sulphite process.

The stands of timber in the United States are required for other important uses, such as lumber, fuel wood, and ties, as well as for pulp, and no logical segregation can be made according to use, present or prospective. Even a species peculiarly adapted to pulping may be used largely for other purposes as well. Statistics showing the stand of timber capable of use for pulp can not therefore be taken as indicating how much is actually available for making pulp. Such data of stands of timber, by regions, are shown in Table 60.

The aggregate stand covered by this table is over 1,800,000,000 cords, or about one-third of the total volume of all species and forms of forest material on the forest area of continental United States. The estimate does not take into account the stands of western hemlock and

Sitka spruce in Alaska which amount to approximately 160,000,000 cords or a somewhat larger supply than is shown in the table for the Lake States region.

An analysis of the table reveals that the Southeastern region has 42 per cent of the estimated total supply of timber suitable for pulpwood. This is due to the inclusion in the estimate of Southern yellow pine, which has been utilized thus far for pulp production in relatively small volume, most of the cut going into lumber. The New England region has 11 per cent of the total stand, the Lake States region 8 per cent, the Middle Atlantic and the South Rocky Mountain regions each 6 per cent, the Central region 4 per cent, the North Rocky Mountain region 3 per cent, and the Pacific coast region 20 per cent.

Spruce, fir, and hemlock combined form about one-third of the total of 1,800,000,000 cords. These species are chiefly utilized in the production of mechanically ground wood and sulphite pulps, which together constitute about three-fourths of the total annual production of wood pulp. Excluding the Alaskan supply, about 60 per cent of the total supply of spruce, fir, and hemlock pulpwood is in the Pacific coast region, 20 per cent in the South Rocky Mountain region, 8 per cent each in the North Rocky Mountain region and in the New England region, and about 5 per cent in the Lake States region. The remainder of the estimated supply of softwoods consists of Southern yellow, white, Norway, and jack pine, species used largely in the production of sulphate pulp, but much more largely for nonpulp uses.

Approximately 500,000,000 cords of the total estimated stand of 1,800,000,000 cords are hardwoods. The species include cottonwood, aspen, yellow poplar, birch, beech, maple, and gum; so far as these enter into pulp they are chiefly manufactured by the soda process.

TABLE 60.—*Pulpwood: Estimated stand of principal kinds of wood now used in the manufacture of pulp, by regions*¹

[Source: U. S. Department of Agriculture, Forest Service, The Forest Situation in the United States, January, 1932]

[In thousand cords;]

Kind of wood	Total	New England States	Middle Atlantic States	Lake States	Central States	Southern States	Pacific Coast States	North Rocky Mountain States	South Rocky Mountain States
Softwood:									
Spruce and fir.....	431,242	45,030	5,931	17,526	610	781	205,861	48,174	107,329
Hemlock.....	206,825	10,467	9,100	12,619	3,962	3,883	166,794		
Southern yellow pine.....	623,325		8,751		10,453	604,321			
White, Norway, and jack pine.....	66,404	24,190	14,575	25,242	848	1,549			
Tamarack.....	1,986	14		1,972					
Total softwoods.....	1,329,982	79,701	38,357	57,359	15,873	610,534	372,655	48,174	107,329
Hardwood:									
Cottonwood and aspen.....	30,463	10,590	1,752	10,662	1,651	5,535			273
Yellow poplar.....	38,702	152	3,338		12,090	23,122			
Birch, beech, and maple.....	305,404	115,235	68,581	74,610	31,430	15,548			
Gum.....	124,694		2,601		9,070	113,023			
Total hardwoods.....	499,263	125,977	76,272	85,272	54,241	157,228			273
Total softwoods and hardwoods.....	1,829,245	205,678	114,629	142,631	70,114	767,762	372,655	48,174	107,602

¹ See discussion in text.² Includes western hemlock.

NOTE.—These figures include large quantities of material suitable for saw and fire wood, to be actually cut for these purposes, but which are also suitable for pulpwood.

Forest utilization and growth.

The annual cut from United States forests is in excess of normal growth and, while it is not possible to measure this situation accurately as applied to pulpwood alone, little reason exists for believing it to be materially different from that for all timber. In a report issued recently the Forest Service presented the following compilation comparing the total annual growth with the cut of forest material.

TABLE 61.—*Timber: Annual growth and cut in the United States*

[Source: The Forest Situation in the United States, U. S. Department of Agriculture, Forest Service January, 1932]

[In thousand cubic feet]

Region	Softwood		Hardwood	
	Annual growth	Annual cut	Annual growth	Annual cut
New England States.....	155,000	293,503	235,000	325,644
Middle Atlantic States.....	110,000	131,618	475,000	639,974
Lake States.....	25,000	469,049	150,000	797,776
Central States.....	80,000	239,387	960,000	1,827,459
Southern States.....	2,440,000	4,214,926	1,390,000	2,203,008
Pacific Coast States.....	515,000	2,920,492	5,000	16,898
North Rocky Mountain States.....	300,000	287,109	-----	81
South Rocky Mountain States.....	200,000	127,802	-----	582
All regions.....	3,825,000	8,683,886	3,215,000	5,811,422

Consumption by reporting mills, by years and regions.

The total quantity and the unit value of pulpwood consumed in the United States in 1929, 1930, and 1931 by 90 identical pulp mills reporting to the Tariff Commission are shown in Table 62. The ratio of pulpwood consumed in 1931 relative to 1930 is 80 per cent and that of value is 75 per cent, indicating a slightly greater shrinkage in value than in quantity.

TABLE 62.—*Pulpwood: Quantity and value consumed in the several regions by pulp mills reporting to the Tariff Commission, 1929, 1930, and 1931*

Region ¹	1929			1930		1931	
	Number of mills	Consumption		Consumption		Consumption	
		Cords	Unit value	Cords	Unit value	Cords	Unit value
Region I.....	41	1,904,421	\$17.64	1,784,851	\$17.20	1,468,708	\$17.79
Region II.....	24	844,790	13.69	875,067	13.18	730,937	12.40
Region III.....	6	301,323	13.20	294,603	12.34	52,625	11.11
Region IV.....	3	256,298	6.29	158,535	6.59	299,054	5.13
Region V.....	16	1,080,208	7.17	1,102,819	7.18	926,606	6.93
Total.....	90	4,387,040	13.33	4,216,935	13.01	3,497,930	12.60

¹ Region I includes Maine, New Hampshire, Vermont, Massachusetts, New York, Connecticut, Rhode Island, Pennsylvania, and New Jersey;
 Region II, Minnesota, Michigan, Wisconsin, Illinois, Indiana, and Ohio;
 Region III, Delaware, Maryland, Virginia, West Virginia, North and South Carolina;
 Region IV, Tennessee, Alabama, Mississippi, Louisiana, and Texas;
 Region V, Washington, Oregon, and California.

RELATION OF CURRENCY DEPRECIATION TO IMPORTS AND PRICES

Monthly imports.

An analysis of pulpwood imports by months reveals a decided seasonal movement, the wood being received in largest quantities during the third quarter of each year. Total imports of pulpwood, by months, for each year 1929-1931, and for January, February, and March, 1932, are shown in Table 63. During October, 1931-March, 1932, there were imported 277,350 cords, or 68 per cent of the imports during the corresponding period of the previous year of 458,658 cords.

This table shows that imports of pulpwood during the winter months of 1931-32 have been very much smaller than during the winter of other recent years. They reflect no advantage to Canadian producers of pulpwood from depreciation in the exchange.

TABLE 63.—Pulpwood: Total imports, by months

[Source: Monthly Summary of Foreign Commerce of the United States]

Month	1929			1930		
	Quantity	Value	Unit value	Quantity	Value	Unit value
	<i>Cords</i>			<i>Cords</i>		
January.....	72,952	\$760,877.00	\$10.48	117,212	\$1,183,235.00	\$10.10
February.....	124,124	1,202,839.00	9.69	139,405	1,363,188.00	9.78
March.....	123,300	1,217,188.00	9.87	124,129	1,208,686.00	9.74
April.....	70,536	692,512.00	9.82	67,903	666,254.00	9.82
May.....	68,089	699,105.00	10.27	66,681	735,360.00	11.04
June.....	141,037	1,617,920.00	11.47	126,225	1,472,270.00	11.67
July.....	175,160	1,929,225.00	11.01	210,744	2,428,229.00	11.52
August.....	197,201	2,149,699.00	10.90	215,868	2,402,742.00	11.13
September.....	166,307	1,947,375.00	11.71	249,837	2,769,325.00	11.05
October.....	82,760	935,821.00	11.30	137,846	1,493,443.00	10.83
November.....	44,710	504,331.00	11.28	80,990	825,279.00	10.19
December.....	84,545	941,967.00	11.14	45,521	478,876.00	10.52
Total.....	1,350,722	14,598,949.00	10.81	1,582,201	17,017,489.00	10.75

Month	1931 ¹			1932 ¹		
	Quantity	Value	Unit value	Quantity	Value	Unit value
	<i>Cords</i>			<i>Cords</i>		
January.....	68,409	\$670,031.00	\$9.79	16,305	\$144,454.00	\$8.86
February.....	75,996	738,125.00	9.97	24,235	189,406.00	7.82
March.....	51,896	521,721.00	10.04	37,693	302,997.00	8.04
April.....	40,582	374,947.00	9.24			
May.....	60,507	654,545.00	10.82			
June.....	85,864	966,737.00	11.26			
July.....	115,009	1,335,230.00	11.60			
August.....	143,513	1,592,251.00	11.10			
September.....	182,774	2,241,633.00	12.26			
October.....	99,386	1,044,838.00	10.51			
November.....	69,803	799,102.00	11.45			
December.....	29,923	272,138.00	9.10			
Total.....	1,021,667	11,211,298.00	10.97			

¹ Preliminary.

Prices.

Three sources of information were available to the commission with respect to prices of pulpwood: (a) The average unit values of imports as reported by the Department of Commerce, (b) the average unit

values of purchases of pulpwood by domestic pulp mills as reported to the Bureau of the Census, and (c) the average unit values of purchases by domestic mills reporting to the Tariff Commission.

The average unit values of imports represent the value in the foreign country—for the most part the value in Canada, from which practically all the imports have come. The average value of pulpwood purchased by the pulp mills, on the other hand, represents values delivered in the United States, including cost of transportation. No satisfactory comparison is practicable between these foreign and domestic values, both because of differences in the transportation costs involved and because of the lack of comparability as regards kinds of wood and the condition in which purchased. Moreover, the movements of the two series from month to month or year to year are scarcely comparable because of variations in the factor of transportation and variations in the composition of the product covered.

The commission did not undertake to obtain prices of pulpwood from the producers, who are numerous and widely scattered and most of whom have no adequate records. It was also found impracticable to obtain significant price series for pulpwood of a given kind and condition from the pulp mills. The records of many of the mills show only average costs for total purchases of pulpwood in which are comprised different species and wood in different conditions. For any single mill averages of this sort for a series of months would not show the true movements of the prices of any particular kind of pulpwood in a particular condition. Still less would combined averages for a large number of mills furnish a reliable indication of the movement of pulpwood prices.

There is evidence, both in the statistical data above mentioned as available with regard to imports and with regard to purchases of pulpwood by the pulp mills, and from the statements of persons familiar with the situation, that the prices of pulpwood received by producers in the United States have declined materially during the last two years. This was, of course, to be expected in view of the decline in prices of wood pulp. Indeed, it is entirely possible that the prices of the wood have fallen more than those of pulp. It frequently happens in a period of declining prices that the prices of raw materials fall more rapidly than those of advanced products. Moreover, in the wood-pulp industry it is the custom of many mills to maintain considerable stocks of pulpwood. In a time of declining demand and falling prices, a mill which has such a stock is likely to draw upon it for material to a greater extent than usual, and to reduce its purchases of pulpwood by a greater percentage than its production of wood pulp.

A further point of significance with respect to the prices of pulpwood is the fact that many of the pulp mills are themselves producers of pulpwood. A mill which has holdings of timber may prefer, in times of declining demand, to keep up its own production of pulpwood while cutting down its purchases from farmers and other unaffiliated producers. It has been asserted by various persons familiar with the situation that the purchases of pulp mills in the Northeastern States from unaffiliated domestic producers have been very greatly reduced, especially during the winter of 1931-32, and that the prices paid have been extremely low.

In various tables already presented concerning the production of imports of pulpwood, values and unit values, as well as quantities, have been given. These for the most part require no comment. Attention should be called to the fact that in some cases the average value of peeled or rossed pulpwood reported is higher than the average value of rough wood reported. At any given time and place the actual value of peeled or rossed wood is always higher than that of rough wood of the same species. Such disparities as appear in the tables are due to lack of comparability either as regards the species composition, the quality, or the condition of the pulpwood covered, or as regards the place to which the values relate.

VI. PULP INDUSTRY AND TRADE OF THE WORLD IN PRINCIPAL FOREIGN PULP-PRODUCING COUNTRIES

WORLD AND CONTINENTAL SUMMARY

World production of wood pulp.

The following statistics of world production of and trade in wood pulp were obtained from data published April, 1931, by the pulpwood department of the American Paper and Pulp Association.

The total world production of wood pulp in 1929 amounted to 18,924,000 tons. The output of the principal producing countries is shown in Table 64.

TABLE 64.—*Wood pulp: World production by countries, 1929*

		[Tons of 2,000 pounds]	
World.....	18,924,000	Finland.....	1,058,000
United States.....	4,863,000	Norway.....	1,035,000
Canada.....	4,021,000	Japan.....	693,000
Sweden.....	2,740,000	Austria.....	363,000
Germany.....	2,201,000	Czechoslovakia.....	322,000
		Other countries.....	1,628,000

Table 65 shows the percentage of apparent world production contributed by the principal producing countries.

TABLE 65.—*Wood pulp: Production by countries in percentages of apparent world totals, 1913, 1920, and 1929*

Country	1913	1920	1929	Country	1913	1920	1929
World.....	100.0	100.0	100.0	Finland.....	3.7	3.5	5.6
United States.....	32.3	37.5	25.7	Norway.....	7.1	6.6	5.5
Canada.....	9.5	19.2	21.2	Japan.....	.9	2.9	3.7
Sweden.....	14.6	14.0	14.5	Austria.....	2.4	1.0	1.8
Germany.....	18.6	9.1	11.6	Czechoslovakia.....	1.4	1.4	1.7
				Other countries.....	9.5	4.3	8.7

In 1929, 58 per cent of the world's production of wood pulp was chemical pulp. Sulphite pulp made up 42 per cent; sulphate, 12 per cent; and soda, 2 per cent; 42 per cent of world production was mechanical pulp.

Continental balance of trade.

The following table shows the continental balance of trade in wood pulp and newsprint in 1928:

TABLE 66.—Continental balances in mechanical and chemical wood pulp in 1929 and in newsprint in 1928

[Tons of 2,000 pounds]

Product	Production	Consumption	Excess	
			Import	Export
Europe:				
Mechanical pulp.....	3,248,000	3,167,000		81,000
Chemical pulp.....	5,671,000	4,408,000		1,263,000
Total.....	8,919,000	7,575,000		1,344,000
Newsprint.....	2,440,000	2,215,000		233,000
North America:				
Mechanical pulp.....	4,283,000	4,203,000	10,000	
Chemical pulp.....	4,833,000	5,806,000	923,000	
Total.....	9,166,000	10,099,000	933,000	
Newsprint.....	4,043,000	3,810,000		225,000
All other:				
Mechanical pulp.....	366,000	437,000	72,000	
Chemical pulp.....	473,000	813,000	340,000	
Total.....	839,000	1,250,000	411,000	
Newsprint.....	267,000	725,000	458,000	
World total:				
Pulp.....	18,924,000	18,924,000	1,344,000	1,344,000
Newsprint.....	6,750,000	6,750,000	458,000	458,000

A large part of the world's wood pulp, particularly in Canada and in northern Europe, is produced for export. Of the world production of chemical pulp, 33 per cent entered world trade in 1929. The chemical pulp export, amounting to over 3,500,000 tons in 1929, was made up of 79 per cent sulphite and 21 per cent sulphate pulp.

Taken as a whole the world export mounted steadily between 1920 and 1930, gaining about 2,000,000 tons in the 10-year period. In the approximate ratio of 2 to 1, the gain was chiefly supplied by Sweden and Finland. In chemical pulp the world exports increased from about 1,332,000 tons in 1913 to 3,566,000 tons in 1929, and in mechanical pulp from 781,000 tons in 1913 to 1,115,000 tons in 1929.

CANADA ¹

Pulpwood resources.

The Department of the Interior of Canada, in a report prepared in 1928, presented the following estimate of the total stand of timber in Canada:

TABLE 67.—Canada: Estimate of total stand of timber of merchantable size

[Million cubic feet]

	Softwoods	Hardwoods	Total
Eastern Provinces.....	65,622	25,811	91,473
Prairie Provinces.....	36,070	20,756	56,826
British Columbia.....	75,630	375	76,006
Total.....	177,362	46,942	224,304

¹ Statistics and other information in this section relative to the timber resources and the production and exports of pulp and pulpwood of Canada were obtained from the following official sources:

Canada. Department of the Interior, The Forests of Canada, Ottawa, 1928.

Canada. Department of Trade and Commerce, Dominion Bureau of Statistics, Census of Industry, The Pulp and Paper Industry, 1928-29, Ottawa, 1931.

Canada. Dominion Bureau of Statistics, Preliminary Report on the Pulp and Paper Industry in Canada, 1930.

Canada. Dominion Bureau of Statistics, Quarterly Report of the Trade of Canada.

Only about one-half of the timber thus accounted for, however, is so situated and in such stands as to be commercially usable. This condition is set forth in the following table:

TABLE 68.—*Canada: Volume of standing timber*

[Million cubic feet]

Kind of timber	Merchant-able	Unprofit-able or In-accessible	Total
Softwoods.....	100,000	77,362	177,362
Hardwoods.....	15,000	31,942	46,942
Total.....	115,000	119,304	224,304

Of the timber tabulated, the largest part is required for lumber.

The drain upon Canadian forests, including that caused by fire and disease, is estimated at over 4,000,000,000 cubic feet per annum. This is, of course, offset to a certain extent by an undetermined amount of growth. To quote from an official Canadian report:

The supply of readily accessible virgin timber is being depleted rapidly in Canada, as is evidenced by the greatly increased distances to which the raw material is being transported to the manufacturing centers and by the extension of operations into territory which a few years ago was considered economically inaccessible.

Of the supplies of pulpwood in Canada only a small proportion is available for export to the United States. This is due to the prohibition by Dominion and Provincial legislation of export of unmanufactured wood from Canadian Crown (public) lands.

Ontario was the first Province to restrict the exportation of pulpwood. Legislation of 1900 prohibited the exportation of unmanufactured pulpwood cut on Crown lands within the Province. Similar Dominion legislation covering Dominion Crown lands in the Prairie Provinces and elsewhere came into force in 1907. During 1908, when exportation from Quebec, New Brunswick, Nova Scotia, and British Columbia was unrestricted, the total exports amounted to 842,308 cords and formed 64 per cent of the apparent total production. Similar restrictions became effective in Quebec in 1910 and in New Brunswick in 1911. In 1912 the total exports formed only 53 per cent of the apparent total. The exportation of Crown land pulpwood was prohibited from British Columbia in 1913, and the exportations from the Dominion fell to less than one-half the total. The ratio of exportation decreased steadily up to 1922 when exports made up only about one-quarter of the total quantity of pulpwood cut in Canada. The proportion in late years has varied, but the tendency has been downward. In 1929, exports formed only 20 per cent of the cut.

As just shown, Canadian pulpwood is exportable from private land. In Nova Scotia, 76 per cent of the forest land is privately owned; nearly half of this is in holdings exceeding 1,000 acres. In New Brunswick a little over 50 per cent is privately owned, and 20 per cent is in holdings exceeding 1,000 acres. The percentage of privately owned forest land in other Provinces is much smaller, being as follows: Quebec, 7 per cent; Ontario, 3½ per cent; Manitoba, 11½ per cent; Saskatchewan, 10½ per cent; Alberta, 12½ per cent; and British

Columbia, 13 per cent. In Canada, as a whole, only 9½ per cent of the forest land has been permanently alienated. The alienated tracts, however, average a heavier stand than the land remaining in public hands, so that on the basis of timber content it is estimated that about 10 per cent of the forest resources of the Dominion is in private ownership.

It is estimated that 60 to 65 per cent of all exported pulpwood is supplied by farmers.

Production of pulpwood.

The following table gives statistics of the Canadian production of pulpwood, showing also the quantity used in Canada and the quantity exported.

TABLE 69.—Canada: Production, consumption, and exportation of pulpwood

Year	Production		Used in Canada		Exported unmanufactured	
	Cords	Average value per cord	Cords	Per cent	Cords	Per cent
1913.....	2, 144, 064	\$6. 67	1, 109, 034	51. 7	1, 035, 030	48. 3
1923.....	4, 654, 663	14. 42	3, 270, 433	70. 3	1, 384, 230	29. 7
1924.....	4, 647, 201	12. 43	3, 316, 951	71. 4	1, 330, 250	28. 6
1925.....	5, 692, 461	12. 21	3, 668, 959	72. 0	1, 423, 502	28. 0
1926.....	5, 621, 305	12. 11	4, 229, 567	75. 2	1, 391, 738	24. 8
1927.....	5, 929, 496	11. 85	4, 337, 637	74. 0	1, 511, 769	26. 0
1928.....	6, 295, 912	11. 85	4, 763, 646	75. 7	1, 532, 266	24. 3
1929.....	6, 536, 335	11. 65	5, 241, 340	80. 2	1, 294, 995	19. 8
1930.....	5, 977, 183	.....	4, 646, 717	77. 7	1, 330, 466	22. 3
1931.....	(1)	.....	(1)	.....	957, 333	.....

¹ Statistics not available.

The total Canadian production of pulpwood increased each year up to 1929 to 6,500,000 cords, but fell in 1930 to 5,977,000 cords, and probably fell still lower in 1931.

Production of wood pulp.

The Canadian production of mechanical and chemical pulp is shown in Table 70.

TABLE 70.—Canada: Production of wood pulp

[In tons of 2,000 pounds]

Year	Total production ¹	Mechanical	Chemical
1913.....	854, 624	600, 216	254, 408
1923.....	2, 475, 004	1, 419, 547	1, 012, 092
1924.....	2, 465, 011	1, 427, 782	986, 242
1925.....	2, 772, 507	1, 621, 917	1, 084, 992
1926.....	3, 229, 791	1, 901, 268	1, 251, 178
1927.....	3, 278, 978	1, 922, 124	1, 278, 672
1928.....	3, 608, 045	2, 127, 699	1, 392, 755
1929.....	4, 021, 229	2, 420, 774	1, 501, 273
1930.....	3, 619, 345	2, 283, 130	1, 265, 057

¹ Includes some unspecified pulp and screenings.

The total production in 1929 was nearly five times the quantity produced in 1913. Total production, however, fell off 400,000 tons in 1930.

The following table specifies the Canadian production of wood pulp in 1929 and 1930 by varieties. Ground wood pulp is much the

most important kind produced in both years. The production of ground wood pulp decreased 138,000 tons in 1930, and the production of chemical pulp decreased 236,000 tons.

TABLE 71.—Canada: Production of wood pulp, by kinds

[Quantities in tons of 2,000 pounds]

Kind of pulp	Quantity		Total value	
	1930	1929	1930	1929
Total production.....	3,619,345	4,021,220	\$112,355,872	\$129,033,154
Ground wood.....	2,283,130	2,420,774	48,317,494	51,617,360
Bleached sulphite.....	293,394	324,548	10,619,367	23,814,234
Unbleached sulphite.....	783,410	911,684	32,494,078	38,144,801
Sulphate, or Kraft.....	188,263	250,104	11,042,906	13,191,726
Screenings.....	71,158	99,182	882,027	1,317,743
All other wood fiber.....		14,937		1,047,290

The bulk of Canadian pulp is manufactured in Quebec and Ontario, as shown in Table 72.

TABLE 72.—Canada: Production of wood pulp by Provinces

[Quantities in tons of 2,000 pounds]

Province	Quantity		Total value	
	1930	1929	1930	1929
Canada.....	3,619,345	4,021,220	\$112,355,872	\$129,033,154
Quebec.....	1,833,000	2,174,805	58,703,067	69,286,498
Ontario.....	1,043,559	1,255,010	31,463,873	39,963,767
British Columbia.....	335,429	304,619	7,939,798	7,790,494
New Brunswick and Manitoba.....	(1)	254,170	(1)	11,043,606
Nova Scotia.....	(1)	32,025	(1)	948,889
All other.....	407,357		14,249,134	

¹ Included under "All other."

The following table summarizes the quantity and value of pulpwood, pulp, and paper produced in Canada in recent years:

TABLE 73.—Canada: Production of pulpwood, pulp, and paper

[Tons of 2,000 pounds]

Year	Quantity			Total value		
	Pulpwood	Pulp	Paper	Pulpwood	Pulp	Paper
	<i>Cords</i>					
1925.....	5,092,461	2,772,507	1,884,705	\$62,181,537	\$100,216,383	\$140,680,177
1926.....	5,621,305	3,229,791	2,266,143	68,100,303	115,154,199	168,277,078
1927.....	5,929,496	3,278,978	2,408,691	70,284,895	114,442,541	168,446,648
1928.....	6,295,912	3,608,045	2,849,199	74,587,833	121,184,214	184,462,356
1929.....	6,536,335	4,021,229	3,197,149	74,120,063	129,033,154	193,193,022
1930 ¹	5,977,183	3,619,345	2,926,787	67,529,612	112,355,872	173,626,383

¹ Preliminary.

The following tables show the quantity of pulpwood used by process of manufacture and by kind of wood:

TABLE 74.—Canada: Pulpwood used, by processes

Process	Quantity		Per cent distribution by process, 1929
	1930	1929	
All processes.....	<i>Cords</i> 4,741,349	<i>Cords</i> 5,278,422	100.0
Mechanical.....	2,241,206	2,370,817	44.9
Sulphite.....	2,168,880	2,437,859	46.2
Sulphate.....	331,167	469,746	8.9

TABLE 75.—Canada: Pulpwood used, by kind of wood

Kind of wood	Quantity		Per cent distribution, by kind, 1929
	1930	1929	
All kinds.....	<i>Cords</i> 4,741,349	<i>Cords</i> 5,278,422	100.0
Spruce and balsam.....	4,415,255	4,880,078	92.5
Hemlock.....	206,882	186,515	3.5
Jack pine.....	73,188	144,120	2.7
Poplar.....	23,315	29,457	.6
All other.....	17,709	38,252	.7

The manufacture of pulp and paper in Canada is carried on in three classes of mills; mills manufacturing pulp only, mills manufacturing paper only, and combined pulp and paper mills. In the last-named the bulk of the pulp produced is used for paper making in the same establishment, but many of these mills produce a surplus for sale or export, whereas others do not produce pulp in sufficient quantities or pulp of the required kind for their own use and purchase a part of their supply in the open market. In Canada, 74 per cent of the pulp produced in 1929 was made in combined pulp and paper mills for their own use in paper making. About 22 per cent was made for export and the remaining 4 per cent was made for sale to other paper mills or factories making other pulp products in Canada.

The capacity and percentage of utilization of Canadian pulp mills in 1928 and 1929 are shown in the following table:

TABLE 76.—Canada: Capacity and output of pulp mills

[In thousands of short tons]

Province	Total rated capacity		Actual output		Per cent of rated capacity	
	1928	1929	1928	1929	1928	1929
GROUND WOOD						
Canada.....	3,184	3,277	2,128	2,421	66.8	73.9
Quebec.....	1,779	1,815	1,248	1,371	70.2	75.5
Ontario.....	1,058	1,062	620	769	58.6	72.4
British Columbia.....	171	182	170	161	99.3	88.5
New Brunswick and Manitoba.....	124	162	60	87	48.2	53.4
Nova Scotia.....	53	54	30	33	56.4	59.9
CHEMICAL						
Canada.....	1,629	1,794	1,393	1,501	85.5	83.7
Quebec.....	867	895	724	761	83.6	85.0
Ontario.....	436	568	398	444	91.2	78.2
British Columbia.....	139	144	133	136	96.1	94.6
New Brunswick and Manitoba.....	187	187	137	160	73.3	85.7

Exports.

Canadian exports of wood pulp in 1913 and since 1923 are shown in the following table. Exports reached their peak in 1926. Since that year exports of mechanical pulp decreased from 382,000 tons to 165,000 tons in 1931. Exports of mechanical pulp are increasingly made in the form of newsprint paper. Canadian exports of chemical pulp decreased from 628,000 tons in 1928 to 440,000 tons in 1931.

TABLE 77.—*Canada: Exports of wood pulp*

(Quantities in tons of 2,000 pounds)

Year	Chemical		Mechanical		Total exported	
	Tons	Average value	Tons	Average value	Tons	Per cent of total production
1913.....	67,525	\$38.44	230,644	\$14.38	298,169	34.9
1923.....	534,251	60.31	341,107	34.00	875,358	35.4
1924.....	528,283	61.19	253,700	31.20	781,983	31.7
1926.....	601,162	62.14	360,205	29.35	961,367	34.7
1926.....	623,703	65.05	382,077	30.11	1,005,780	31.1
1927.....	597,228	65.08	260,831	29.77	879,154	26.8
1928.....	628,438	62.77	203,670	27.23	863,801	23.9
1929.....	585,108	63.28	209,332	28.22	830,848	20.7
1930.....	522,612	.....	208,758	.....	760,220	21.0
1931.....	440,414	.....	165,058	.....	622,537	.....

Table 78 summarizes by quantity and value recent exports of pulpwood and pulp, and by value exports of paper.

TABLE 78.—*Canada: Exports of pulpwood, pulp, and paper*

Year	Quantity			Value		
	Pulpwood	Pulp	Paper	Pulpwood	Pulp	Paper
	<i>Cords</i>	<i>Tons of \$,000 pounds</i>				
1925.....	1,423,502	901,367	(1)	\$14,168,935	\$47,931,905	\$106,624,046
1926.....	1,391,738	1,005,779	(1)	14,067,030	52,022,122	121,414,513
1927.....	1,541,769	876,904	(1)	15,702,705	46,996,041	129,637,687
1928.....	1,532,261	863,801	(1)	15,269,660	45,614,823	147,156,792
1929.....	1,294,095	830,848	(1)	13,314,738	43,307,984	154,919,122
1930.....	1,330,406	760,220	(1)	13,611,617	39,059,979	138,530,243
1931.....	967,333	622,537	(1)	9,359,592	30,056,643	111,114,042

¹ Total quantities not available.

The quantity and value of exports of newsprint paper are shown in the following table:

TABLE 79.—*Canada: Exports of newsprint paper*

Year	Quantity	Value	Per cent of total quantity produced
	<i>Tons of \$,000 pounds</i>		
1923.....	1,137,962	\$85,611,258	91.0
1924.....	1,219,354	90,990,711	87.8
1925.....	1,401,655	98,945,337	91.2
1926.....	1,731,986	114,090,595	91.7
1927.....	1,881,865	123,222,094	90.4
1928.....	2,206,588	141,103,527	91.4
1929.....	2,515,495	148,865,548	92.3
1930.....	2,331,010	133,280,932	.....

Exports for 1928 and 1929 of the several kinds of pulp are tabulated by principal countries of destination. Nearly seven-eighths of the total quantity exported goes to the United States.

TABLE 80.—Canada: Exports of wood pulp, by countries of destination and kinds

Kind of pulp and country to which exported	Quantity		Value	
	1928	1929	1928	1929
Total wood pulp.....	<i>Tons of 2,000 pounds</i> 863, 801	<i>Tons of 2,000 pounds</i> 830, 848	\$45, 614, 823	\$43, 367, 984
United States.....	723, 595	711, 430	37, 632, 895	36, 284, 596
Japan.....	51, 718	42, 215	2, 620, 240	2, 118, 349
United Kingdom.....	44, 712	32, 023	1, 673, 985	1, 491, 168
France.....	19, 806	18, 367	1, 693, 370	1, 420, 925
Italy.....	8, 585	9, 572	738, 044	822, 208
Belgium.....	9, 550	8, 267	820, 496	707, 774
Germany.....	3, 529	2, 567	302, 944	220, 742
Spain.....	865	1, 006	74, 418	86, 106
Other countries.....	1, 141	5, 401	58, 431	216, 116
Bleached sulphite.....	251, 542	253, 809	19, 112, 964	19, 246, 692
United States.....	184, 999	196, 474	13, 992, 869	14, 004, 258
France.....	19, 806	15, 371	1, 693, 370	1, 331, 432
Italy.....	8, 585	9, 572	738, 044	822, 208
United Kingdom.....	5, 642	8, 934	498, 831	771, 302
Belgium.....	9, 550	8, 267	820, 496	707, 774
Japan.....	18, 507	11, 114	987, 519	661, 135
Germany.....	3, 529	2, 567	302, 944	220, 742
Spain.....	865	1, 006	74, 418	86, 106
Other countries.....	59	504	4, 473	41, 735
Unbleached sulphite.....	214, 126	196, 978	10, 738, 977	9, 713, 979
United States.....	179, 478	165, 254	9, 048, 218	8, 243, 185
Japan.....	31, 866	29, 554	1, 558, 357	1, 374, 573
United Kingdom.....	2, 655	1, 846	120, 458	81, 227
Other countries.....	127	323	5, 944	14, 994
Sulphate (Kraft).....	162, 771	134, 321	9, 595, 866	7, 856, 486
United States.....	160, 655	131, 643	9, 479, 741	7, 706, 896
Other countries.....	2, 116	2, 678	116, 125	149, 590
Mechanical.....	203, 670	209, 332	5, 546, 120	5, 006, 638
United States.....	167, 255	181, 787	4, 497, 424	5, 090, 121
United Kingdom.....	36, 415	21, 244	1, 048, 696	638, 639
Other countries.....		6, 301		177, 878
Screenings.....	31, 673	36, 408	620, 896	644, 189
United States.....	31, 509	36, 271	614, 643	640, 136
Other countries.....	184	137	6, 253	4, 053

GERMANY

German forests are insufficient to supply the home demands for pulpwood. Germany imports approximately 60 per cent of the 3,500,000 cords of wood used annually. Imports come from Russia, Austria, and Czechoslovakia.² In 1930, Germany received 848,000 cords of wood from Russia.³

Germany apparently does not publish statistics of production of wood pulp. Table 81 shows her foreign trade in pulpwood and wood pulp in 1931 and from 1925 to 1931, inclusive. Net exports of wood pulp are equal to about 10 per cent of those of Sweden. They decreased considerably from 1930 to 1931.

¹ Germany, Statistisches Jahrbuch für das Deutsche Reich (published annually).

² Germany, Monatliche Nachweise über den auswärtigen Handel Deutschlands, December 1931, pp. 8-9.

TABLE 81.—Germany: Foreign trade in pulpwood and wood pulp ¹

[Tons of 2,000 pounds]

Year	Pulpwood			Wood pulp		
	Imports	Exports	Excess of imports	Imports	Exports	Excess of exports
1913.....	1, 416, 316	73, 722	1, 342, 594	60, 638	207, 413	146, 775
1925.....	2, 358, 837	164, 840	2, 342, 353	120, 938	190, 208	72, 270
1926.....	2, 020, 799	32, 513	1, 988, 286	71, 063	275, 192	204, 129
1928.....	2, 490, 183	20, 388	2, 469, 795	185, 632	269, 210	83, 578
1929.....	2, 793, 087	33, 274	2, 759, 813	181, 615	305, 780	124, 174
1930.....	2, 326, 507	36, 238	2, 290, 271	159, 691	332, 108	172, 415
1931 ²	1, 608, 430	48, 680	1, 559, 750	169, 791	324, 491	154, 700

¹ Pulpwood, April, 1931, p. 26.² *Ibid.*, p. 31.

In the following table are recorded Germany's exports of wood pulp to the principal countries of destination in 1931:

TABLE 82.—Germany: Exports of wood pulp by principal countries of destination, 1931 ¹

Destination	Quantity	Value	Destination	Quantity	Value
	<i>Tons of 2,000 pounds</i>			<i>Tons of 2,000 pounds</i>	
Argentina.....	7, 416	\$42, 912	Switzerland.....	6, 324	\$32, 255
Brazil.....	5, 877	27, 435	Spain.....	6, 480	32, 610
France.....	71, 001	292, 660	United States.....	74, 567	370, 311
Great Britain.....	51, 901	217, 587	Other.....	34, 392	152, 178
Italy.....	19, 525	90, 220			
Japan.....	621	4, 726	Total.....	324, 491	1, 420, 128
Netherlands.....	46, 387	151, 233			

¹ Germany: Monatliche Nachweise über den auswärtigen Handel Deutschlands, 1931.

SWEDEN

Pulpwood resources.

The first general census of Swedish forests, completed in 1929, showed a stock of timber of 3,900,000,000 of cords, excluding bark. Of the total stand 40 per cent is red pine, 42 per cent spruce, 13 per cent birch, and 5 per cent other species. Annual growth amounts to 13,200,000 cords annually, exclusive of bark. The annual consumption, excluding bark, is about 11,000,000 cords, but this does not include a large quantity lost by self-thinning, ravages of fungi and pests, and forest fires. Moreover, the timber cutting takes place for the most part only in the more conveniently located forests. As the less accessible forests are cut, the cost becomes higher.⁴

Production.

Table 83 shows the production in Sweden of wood pulp and paper for 1913 and since 1920. The production of pulp more than doubled from 1913 to 1929. In 1930 and 1931 it fell off considerably.

⁴ Sweden Year-Book, 1931 (edited and published with the assistance of public authorities), pp. 87-89.

TABLE 83.—Sweden: Production of wood pulp and paper ¹
(Tons of 2,000 pounds)

Year	Wood pulp			Paper and paper board		
	Mechanical ²	Chemical ³	Total	Board	Paper	Total
1913.....	359,457	948,507	1,307,964	53,962	313,455	367,017
1920.....	357,219	1,073,236	1,430,455	18,069	372,931	441,000
1923.....	416,987	1,095,289	1,512,276	71,543	433,080	504,623
1924.....	495,648	1,373,058	1,868,706	73,494	504,357	587,851
1925.....	483,847	1,426,657	1,910,504	79,628	534,834	614,462
1926.....	525,258	1,597,786	2,123,044	86,156	573,379	659,535
1927.....	577,274	1,730,018	2,307,292	88,218	584,249	672,467
1928.....	595,923	1,495,029	2,093,952	97,234	564,790	662,024
1929.....	725,597	2,063,591	2,789,188	110,517	683,030	793,547
1930.....	⁴ 637,129	⁴ 2,031,539	.....	.....	.....	.....
1931.....	⁴ 628,311	⁴ 1,793,442	.....	.....	.....	.....

¹ Statistisk Arbok: 1927-28, p. 115; 1929-30, p. 109; 1931, p. 122.

² Dry weight.

³ Report from United States consul general at Stockholm, Sweden, dated Jan. 22, 1932, p. 18.

⁴ Svensk Pappermasse Tidning, Dec. 31, 1931, p. 882.

In Table 84 the production of chemical pulp is divided into bleached and unbleached sulphite and sulphate pulp.

TABLE 84.—Sweden: Production of chemical pulp ¹
(Tons of 2,000 pounds)

Year	Sulphite		Sulphate	Total
	Bleached	Unbleached		
1925.....	120,151	940,261	365,964	1,426,376
1926.....	133,378	1,029,549	434,306	1,597,233
1927.....	160,936	1,069,231	499,342	1,729,509
1928.....	138,890	885,147	473,959	1,498,026
1929.....	201,721	1,136,471	725,314	2,063,506
1930.....	200,619	1,134,267	696,653	2,031,539
1931 (approximate).....	190,698	932,546	670,193	1,793,442

¹ Svensk Pappermasse Tidning, Dec. 31, 1931, p. 882.

The topography of Sweden is not, as a rule, such as unduly to impede access to the timber. Timber transportation is facilitated, except in the southern part of the country, by the plentiful supply of snow in winter and by the comprehensive system of waterways. In the southern part of the country and elsewhere tractors and lorries are successfully used for carrying timber.

The workmen needed for lumbering and transport usually live in the vicinity of the forests, where the farmers are accustomed to work. Lumbermen are usually farmers who use their own horses. Proprietors of larger forests, the State, and the paper and pulp companies also have a permanent staff of forest workmen, living on small tenant farms scattered throughout the forests.⁵

The production of chemical pulp in Sweden is largely integrated with the lumber industry, using waste incident to the manufacture of lumber.⁶

Since the beginning of 1932, labor difficulties have beset the Swedish wood-pulp industry. The wage agreements in force prior to January 1, 1932, were canceled on that date.

⁵ Sweden Year-Book, 1931, p. 84.

⁶ Pulpwood, April, 1931, p. 18.

The Swedish Wood Pulp Association announced a 6 per cent cut in hourly wages and a 12 per cent cut in piecework rates effective February 23, 1932.⁷ This announcement caused the workers in a number of mills to strike. Together with the shutdowns of other mills because of business depression, it was estimated that in March sulphite pulp mills in Sweden with an annual capacity of from 880,000 to 990,000 short tons were closed.⁸ A mediation commission was appointed, but its wage proposals were rejected by the workers on April 8, 1932, and a general strike in wood-pulp mills, effective April 11, was declared. Seventeen thousand workers are involved.⁹

Exports.

Table 85 shows the quantity of wood pulp, cardboard, and paper exported from Sweden in 1913, and each year from 1923 on. For 1929 Sweden's exports of wood pulp were double what they were in 1913. The marked increase in the exports of sulphate pulp is in consonance with the increasing importance of this variety in recent years.

Sweden's exports of pulp fell off in 1930. The decline continued in 1931 in dry mechanical pulp and in unbleached sulphite, but exports of wet mechanical pulp were higher in 1931 than in 1930. Exports of unbleached sulphate made a high record in 1931.

TABLE 85.—Sweden: Exports of wood pulp, cardboard, and paper¹

[Tons of 2,000 pounds]

Article	1913	1923	1925	1927	1928	1929	1930 ²	1931 ³
Wood pulp, total ⁴	933, 799	987, 202	1, 309, 353	1, 603, 530	1, 462, 516	1, 972, 344	1, 808, 384	.....
Mechanical—								
Wet.....	291, 061	301, 440	361, 081	467, 578	497, 207	611, 790	464, 778	502, 759
Dry.....	65, 254	39, 174	52, 098	39, 676	60, 048	65, 459	58, 052	42, 516
Sulphite—								
Bleached.....	22, 807	50, 343	90, 730	126, 230	112, 817	155, 348	151, 850	165, 416
Unbleached—								
Wet.....	64, 537	29, 835	35, 432	52, 240	33, 991	47, 043	46, 821	38, 340
Dry.....	560, 116	547, 173	694, 281	794, 508	655, 758	864, 339	829, 167	676, 301
Sulphate—								
Bleached.....	12, 094	2, 975	565	433	1, 702	76	.....	93
Unbleached—								
Wet.....	2, 035	132	144	1, 009	4, 453	19, 251	21, 134	21, 464
Dry.....	94, 711	184, 833	273, 077	382, 268	364, 367	548, 079	493, 668	554, 437
Cardboard, total.....	28, 568	29, 471	33, 130	36, 134	40, 421	46, 486	46, 056	.....
Paper, total.....	209, 010	334, 950	412, 728	432, 669	412, 512	492, 470	442, 993	.....
Newsprint.....	67, 956	158, 502	191, 027	189, 294	176, 746	218, 140	192, 833	.....
Other.....	141, 054	176, 448	221, 700	243, 376	235, 765	274, 331	250, 160	.....

¹ Sweden, Statistisk Årbok (various editions).

² Sweden, Sveriges In- och Utörsel (published monthly).

³ On dry basis.

Table 86 shows the quantities of the several kinds of wood pulp exported from Sweden in January and February, 1931 and 1932.

¹ Bureau of Foreign and Domestic Commerce, Paper Division, Side Runs on the Paper Trade (a mimeographed periodical publication), Feb. 20, 1932, p. 1.

² Svensk Pappers Tidning, Mar. 31, 1932, p. 185.

³ Side Runs on the Paper Trade, Apr. 10, 1932, p. 1.

TABLE 86.—Sweden: Exports of wood pulp in specified months ¹

[Tons of 2,000 pounds]

Kind of pulp	January		February		January-February	
	1931	1932	1931	1932	1931	1932
Mechanical:						
Wet.....	24,001	18,024	6,797	11,337	31,698	29,062
Dry.....	6,195	2,793	1,185	1,694	7,380	4,488
Sulphite:						
Bleached.....	9,185	11,370	9,150	12,958	18,336	24,328
Unbleached—						
Wet.....	1,143	1,668	2,170	1,266	3,312	2,934
Dry.....	43,781	39,696	10,293	33,690	54,074	73,386
Sulphate:						
Bleached.....		3		28		31
Unbleached—						
Wet.....	952	1,241	390	2,589	1,349	3,830
Dry.....	48,624	33,791	3,415	20,033	52,039	53,824

¹ Sweden, Sveriges In-Och UtFörsel, January, 1932, p. 17; February, 1932, p. 41.

The table shows that exports of mechanical pulp were less in the first two months of 1932 than in the corresponding months of 1931. There was an increase in the exports of chemical pulp in the later period. The increased exports in 1932 were in part caused by the laying in of stocks by foreign buyers in anticipation of a strike ¹⁰ in the Swedish wood-pulp industry, and in the fear that England would levy duties on wood pulp. ¹¹ Anxiety to obtain shipments before these anticipated events came to pass was increased by the fact that stocks of wood pulp in Sweden had become depleted by the end of 1931. According to the United States consul general at Stockholm, the Swedish stocks of sulphite pulp at the end of 1931 amounted to about 60 per cent of the stocks available at the beginning of 1931, while stocks of sulphate pulp were practically depleted at the end of 1931. ¹²

Swedish pulp sales declined during the first half of March. ¹³

Export statistics of wood pulp from Sweden by principal countries of destination are shown in Table 87. The United States is a relatively unimportant market for Swedish mechanical pulp, but is Sweden's most important customer for bleached sulphite, dry unbleached sulphite, and dry unbleached sulphate. Great Britain is the principal market for mechanical wood pulp and the second market for dry unbleached sulphite and dry unbleached sulphate.

¹⁰ Department of Commerce.

¹¹ Svensk Pappers Tidning, Feb. 29, 1932, p. 115.

¹² Report dated Jan. 22, 1932, p. 17.

¹³ Side Runs on the Paper Trade, Mar. 26, 1932, p. 1.

TABLE 87.—Sweden: Exports of wood pulp by principal countries of destination
(Quantity in tons of 2,000 pounds)

Article and country of destination	1928 ¹		1929 ²	
	Quantity	Value	Quantity	Value
Mechanical:				
Wet.....	497, 207	\$5, 767, 417	611, 790	\$7, 017, 196
Great Britain.....	305, 726	3, 611, 465	338, 953	3, 956, 716
France.....	129, 161	1, 457, 694	181, 571	1, 984, 630
Belgium.....	20, 437	228, 111	30, 414	349, 734
Denmark.....	10, 601	126, 493	20, 227	261, 540
Netherlands.....	14, 908	155, 276	17, 463	195, 175
United States.....	591	9, 057	15, 678	179, 050
Norway.....	11, 109	121, 328	5, 100	58, 550
Other.....	4, 674	48, 003	2, 484	31, 801
Dry.....	60, 047	1, 511, 751	65, 460	1, 708, 368
Spain.....	16, 311	406, 507	21, 175	555, 244
France.....	14, 150	355, 647	15, 329	388, 382
Brazil.....	5, 906	154, 456	8, 206	217, 108
Germany.....	6, 888	168, 790	3, 284	85, 498
United States.....	611	15, 015	3, 275	82, 648
Great Britain.....	1, 771	45, 396	2, 550	68, 032
Belgium.....	947	27, 007	2, 432	64, 070
Other.....	13, 463	338, 933	9, 198	246, 786
Sulphite, bleached.....	112, 817	8, 076, 320	155, 348	11, 296, 292
United States.....	37, 649	2, 651, 862	48, 212	3, 447, 287
Italy.....	15, 184	1, 203, 033	27, 809	2, 209, 952
Netherlands.....	7, 979	589, 041	16, 913	1, 274, 101
France.....	9, 741	690, 274	11, 929	825, 721
Germany.....	7, 595	588, 437	9, 613	733, 457
Great Britain.....	6, 047	427, 906	9, 094	621, 396
Spain.....	6, 914	450, 009	8, 262	543, 482
Belgium.....	3, 534	239, 413	5, 229	356, 845
Other.....	18, 174	1, 236, 345	18, 287	1, 283, 931
Sulphite, unbleached:				
Wet.....	33, 090	720, 930	47, 043	982, 938
Denmark.....	15, 759	331, 350	21, 352	450, 287
Norway.....	11, 829	255, 068	11, 145	236, 760
Great Britain.....	3, 247	63, 340	5, 935	124, 463
United States.....	1, 383	37, 471	4, 299	111, 019
Belgium.....	221	2, 351	2, 745	34, 427
Other.....	1, 651	31, 330	1, 567	25, 982
Dry.....	655, 768	29, 758, 921	864, 338	38, 950, 968
United States.....	272, 738	12, 591, 867	335, 908	15, 358, 631
Great Britain.....	175, 384	8, 228, 291	244, 886	11, 209, 806
France.....	59, 430	2, 576, 226	89, 972	3, 902, 316
Spain.....	28, 268	1, 185, 580	33, 474	1, 472, 864
Belgium.....	16, 561	700, 265	27, 981	1, 216, 013
Germany.....	16, 557	704, 263	22, 807	984, 574
Italy.....	19, 516	847, 453	21, 027	935, 382
Netherlands.....	15, 364	687, 099	18, 147	790, 371
Norway.....	9, 048	360, 680	17, 150	714, 101
Other.....	42, 892	1, 877, 297	52, 928	2, 366, 910
Sulphate (soda), bleached.....	1, 702	81, 373	77	5, 965
Great Britain.....	503	26, 549	.....	.....
Italy.....	482	21, 608	.....	.....
United States.....	214	9, 772	.....	.....
Other.....	503	23, 444	77	5, 965
Sulphate, unbleached:				
Wet.....	4, 453	87, 657	19, 251	437, 029
France.....	1, 982	46, 139	8, 190	184, 450
Denmark.....	1, 383	31, 128	4, 631	97, 825
Other.....	1, 088	10, 390	6, 430	154, 754
Dry.....	304, 368	16, 787, 621	548, 079	53, 639, 081
United States.....	251, 632	11, 645, 110	355, 187	15, 364, 917
Great Britain.....	33, 853	1, 587, 195	66, 938	2, 919, 284
France.....	19, 343	858, 004	21, 592	939, 243
Germany.....	9, 138	424, 032	18, 231	760, 959
Italy.....	8, 436	384, 714	14, 121	613, 623
Netherlands.....	9, 199	423, 010	10, 598	438, 714
Other.....	32, 767	1, 465, 556	61, 412	2, 602, 341

¹ Sweden, Handel, 1928, pp. 300-301.² *Ibid.*, 1929, pp. 303-305.

FINLAND

Pulpwood resources.

The timber resources of Finland¹⁴ may be summarized as follows:

[In million cords¹]

Kind of timber	Stand inclusive of bark	Estimated useful annual growth
Pine.....	214	4.6
Spruce.....	133	3.0
Broadleaf.....	100	2.4
Total.....	447	10.0

¹ Converted from cubic meters at 3.624 cubic meters per cord of 128 cubic feet.

Finland's timber is cut in excess of the annual growth. According to the investigation mentioned, the excess cutting of spruce is 25 per cent and of pine about 14 per cent.¹⁶

Finland is admirably situated to use Russian pulpwood, for many Russian rivers drain through Finland and wood can be driven directly to Finnish mills at low costs.¹⁵ In 1930, however, no exports of Russian pulpwood to Finland were reported.¹⁶

Production.

The production of wood pulp in Finland in 1913 amounted to 363,759 short tons. Of this, 187,391 short tons were mechanical, and the remainder was almost equally divided between sulphite and sulphate.¹⁷

Table 88 shows the quantities of the several kinds of pulp and paper produced in Finland in 1925 and later years.

TABLE 88.—Finland: Production of wood pulp and paper *

[Tons of 2,000 pounds]

Kind of pulp	1925	1926	1927	1928	1929	1930	1931
Mechanical pulp:							
Dry.....	56, 206	52, 173	64, 155	59, 843	58, 478	.....	.....
Wet.....	194, 424	203, 916	247, 094	287, 550	324, 595	.....	.....
Pulpboard.....	63, 694	60, 913	51, 525	58, 052	69, 881	.....	.....
Chemical pulp.....	437, 882	457, 923	545, 715	644, 112	689, 082	• 781, 959	• 786, 768
Sulphate.....	106, 553	120, 853	128, 005	160, 899	172, 529	• 210, 229	• 211, 668
Bleached.....	19, 917	22, 521	25, 564	26, 327	30, 757	.....	.....
Not bleached, wet.....	20, 733	23, 432	.....	.....	.....	.....	.....
Not bleached, dry.....	65, 903	74, 536	102, 441	134, 572	141, 772	.....	.....
Sulphite.....	331, 329	367, 070	417, 710	483, 213	516, 553	• 571, 730	• 575, 093
Bleached.....	47, 178	46, 223	52, 600	65, 715	68, 555	.....	.....
Not bleached, wet.....	59, 967	70, 564	.....	.....	.....	.....	.....
Not bleached, dry.....	224, 184	241, 283	365, 110	417, 498	447, 998	.....	.....
Newsprint.....	192, 066	187, 411	206, 015	225, 662	231, 334	.....	.....
Other paper.....	93, 080	96, 064	104, 383	110, 707	100, 144	.....	.....
Wall paper.....	220	209	.....	271	.....	.....	.....

* Finland, Suomen Tilastollinen Vuosikirja, 1929, p. 114; 1930, p. 115; 1931, pp. 114 and 115.

• Pappers Och Trävarutidskrift för Finland, Jan. 15, 1932.

¹⁴ U. S. Department of Commerce, Bureau of Foreign and Domestic Commerce, Commerce Reports, Sept. 8, 1930, pp. 608-610.

¹⁵ Pulpwood, April, 1931, p. 22.

¹⁶ *Ibid.*, p. 31.

¹⁷ *Ibid.*, p. 20.

Finland possesses power resources suitable for the production of wood pulp. Fuel, other than wood, and chemicals, and many articles of consumption for workmen must be imported. In the winter much of the woods labor is performed by farmers.

Exports.

Statistics of exports of wood pulp and paper from Finland in the year 1913 and from 1923 to 1931 (inclusive) are given in Table 89. Exports of pulp show an almost unbroken increase up to and including 1929; there was a slight decline in 1930, but another advance in 1931. Exports of mechanical pulp were the same in 1931 as in 1930. Exports of chemical pulp increased 169,000 short tons in 1931 over 1930.

TABLE 89.—*Finland: Exports of wood pulp and paper* ¹

[Tons of 2,000 pounds]

Year	Pulp			Card-board ²	Paper			
	Mechanical ³	Chemical ⁴	Total		Wrapping	Newsprint	Other	Total
1913.....	49,510	83,201	132,711	59,250	72,250	77,234	10,377	160,533
1923.....	69,094	218,787	287,881	25,867	26,342	140,452	24,256	191,050
1924.....	112,419	303,243	415,662	36,349	30,774	148,548	22,766	202,088
1925.....	80,513	324,426	404,939	56,262	32,836	164,063	36,130	233,029
1926.....	80,371	366,025	446,396	46,538	34,041	158,624	38,919	231,584
1927.....	112,638	400,765	513,403	42,206	38,303	171,348	36,675	246,326
1928.....	151,805	521,421	673,226	49,877	45,226	189,115	34,407	268,748
1929.....	177,198	533,671	710,869	57,661	43,770	191,440	33,590	268,800
1930 ⁵	173,548	524,505	698,053	51,677	45,840	207,026	.....	.....
1931 ⁶	173,497	693,772	867,269	.....	.....	.....	.....	.....

¹ Finland, Suomen Tilastollinen Vuosikirja, 1930, p. 133.

² Includes wet pulp calculated on the basis of dry.

³ Puhvia (carton).

⁴ Finland, Tilastokatsaus, December, 1931, p. 16.

⁵ Bank of Finland, Monthly Bulletin, January, 1932, p. 14.

Table 90 shows the quantity and value of the several kinds of wood pulp exported from Finland in 1929 and 1930.

TABLE 90.—*Finland: Exports of wood pulp, by kinds* ¹

Kind of pulp	1929		1930	
	Tons of 2,000 pounds	United States dollars	Tons of 2,000 pounds	United States dollars
Mechanical:				
Wet.....	223,639	2,365,539	236,443	2,090,520
Dry.....	65,378	1,557,613	55,327	1,341,473
Sulphite:				
Wet.....	72,205	1,572,450	102,056	2,218,232
Dry.....	369,518	16,849,016	343,510	15,569,635
Sulphate:				
Wet.....	26	506	5,214	115,714
Dry.....	128,037	6,112,599	127,081	5,161,447

¹ Finland: Ulkomaankauppa Vuosijulkaisu, 1930, pp. 61-62.

Exports of mechanical and chemical pulp by months are shown in the following table for 1929, 1930, and 1931.

TABLE 91.—*Finland: Exports of pulp (dry weight), by months*¹

[Tons of 2,000 pounds]

Month	Mechanical				Chemical			
	1929	1930	1931 ²	1932 ³	1929	1930	1931 ²	1932 ³
January.....	12,358	16,416	15,267	16,746	45,988	50,225	44,338	55,233
February.....	5,589	10,315	8,234	12,026	27,436	42,043	32,602	77,519
March.....	1,206	9,907	13,970	.....	22,928	39,657	38,305	.....
April.....	15,869	15,478	11,252	.....	61,737	40,552	45,954	.....
May.....	22,037	13,829	23,409	.....	50,397	44,238	63,112	.....
June.....	17,887	16,953	14,737	.....	40,146	37,767	40,871	.....
July.....	13,080	15,238	18,083	.....	37,719	44,977	55,040	.....
August.....	19,228	11,370	16,119	.....	49,717	39,529	58,722	.....
September.....	14,141	16,293	16,917	.....	47,272	35,681	67,360	.....
October.....	17,469	14,358	11,430	.....	52,360	49,731	67,593	.....
November.....	19,205	16,177	13,633	.....	52,481	49,415	78,969	.....
December.....	18,229	17,215	11,445	.....	45,490	44,691	104,320	.....
Total.....	177,198	173,549	173,496	.....	533,671	524,505	693,772	.....

¹ Bank of Finland, Monthly Bulletin, January, 1932, p. 14.² Preliminary.³ United States consular report.

The following table shows the principal countries receiving wood pulp exported by the Finnish Cellulose Union in 1930 and 1931:

TABLE 92.—*Finland: Distribution of exports of the Finnish Cellulose Union*¹

[Tons of 2,000 pounds]

Country of destination	1931		1930	
	Sulphite	Sulphate	Sulphite	Sulphate
England.....	176,304	49,072	147,013	28,703
United States.....	116,597	70,293	112,237	33,808
France.....	30,338	10,994	27,790	2,146
Belgium.....	22,734	7,439	17,801	3,716
Other countries.....	63,957	49,569	84,873	36,296
Total.....	409,930	187,367	389,714	104,667

¹ Pappers Och Trävarutidskrift för Finland, Jan. 15, 1932, p. 3.

Exports of chemical wood pulp by the Finnish Cellulose Union and the OY. Diesen Wood Co. AB. in January and February, 1932, by countries of destination were as follows:

TABLE 93.—*Finland: Exports of wood pulp by countries of destination, January and February, 1932*¹

[Tons of 2,000 pounds]

Country of destination	January			February		
	Sulphite	Sulphate	Total	Sulphite	Sulphate	Total
England.....	12,560	5,907	18,467	27,921	8,400	36,321
United States.....	3,374	3,220	6,614	11,606	7,753	19,364
Germany.....	1,206	666	1,872	673	1,150	1,823
France.....	1,209	437	1,646	(²)	(²)	(²)
Japan.....	981	639	1,620	1,326	383	1,709
Belgium.....	995	428	1,423	1,811	47	1,858
Italy.....	1,196	124	1,322	1,506	373	1,881
South America.....	(²)	(²)	(²)	1,940	217	2,157
Other countries.....	1,679	728	2,407	1,823	659	2,482
Total.....	23,222	12,149	35,371	48,606	18,987	67,593

¹ Pappers Och Trävarutidskrift för Finland, Febr. 15, 1932, p. 88; Mar. 15, 1932, p. 160.² Included in "Other countries."

NORWAY

Pulpwood resources.

The timber resources of Norway, as given in Commerce Reports,¹⁸ are as follows:

[In millions of cords¹]

Kind of timber	Stand inclusive of bark	Estimated useful annual growth
Pine.....	29	0.6
Spruce.....	56	1.5
Broadleaf.....	25	.4
Total.....	110	2.5

¹ Converted from cubic meters at 3.624 cubic meters per cord of 128 cubic feet.

A comparison of the annual forest growth of Norway with the annual cut indicates an annual excess of cut amounting to about 273,000 cords. This deficit occurs largely in the use of spruce. Pine, which supplies about one-quarter of the softwood timber used in Norway, shows a small surplus, but in hardwoods there is an appreciable deficit.¹⁹

In 1930, Norway imported 92,848 cords of pulpwood from Russia.²⁰

Production.

The following table gives the production of wood pulp, in Norway, in recent years.²¹

TABLE 94.—Norway: Production of wood pulp

[Tons of 2,000 pounds, net]

Year	Mechanical	Chemical	Total
1913.....	854,282	335,320	1,189,602
1926.....	926,152	364,057	1,290,209
1927.....	984,244	410,429	1,394,673
1928.....	1,041,784	445,027	1,486,811
1929.....	1,126,445	492,704	1,619,149

The production of chemical pulp is divided almost equally between bleached and unbleached sulphite. Some sulphate pulp is produced in Norway, but it does not ordinarily form an important part of the industry.²²

Norway's possession of abundant water power is an advantage in the production of mechanical pulp. Insufficient supplies of pulpwood, however, raise the costs, it is reported, about 20 per cent above those in Sweden or Finland.²²

¹⁸ U. S. Department of Commerce, Bureau of Foreign and Domestic Commerce, *Commerce Reports*, Sept. 8, 1930.

¹⁹ *Pulpwood*, April, 1931, p. 24.

²⁰ *Ibid.*, p. 31.

²¹ *Norway Year Book*, 1931, pp. 352-353.

²² *Pulpwood*, April, 1931, p. 24.

Exports.

Table 95 shows the quantity of wood pulp and paper exported from Norway in 1913 and from 1925 to 1930. The total exports of wood pulp have decreased since 1928, and of paper since 1929.

TABLE 95.—Norway: Exports of wood pulp and paper ¹

[Tons of 2,000 pounds]

Year	Wood pulp (dry weight)	Paper	
		Total	News-print
1913.....	513, 194	447, 838	243, 124
1925.....	592, 153	702, 668	386, 217
1926.....	518, 437	635, 559	342, 920
1927.....	531, 654	748, 374	425, 851
1928.....	637, 295	769, 072	412, 005
1929.....	635, 560	780, 425	423, 996
1930.....	597, 959	729, 617	421, 898

¹ U. S. Department of Commerce, Commerce Yearbook, 1928, p. 490; 1931, p. 194.

Statistics of exports of the different kinds of wood pulp and paper in 1929 and 1930 are given in Table 96. The totals have apparently not been reduced to dry weight.

TABLE 96.—Norway: Exports of wood pulp, cardboard, and paper

[Quantities in tons of 2,000 pounds]

Item	1929 ¹		1930 ²	
	Quantity	Value	Quantity	Value
Wood pulp.....	970, 512	\$26, 344, 504	940, 360	\$23, 850, 149
Mechanical.....	661, 631	7, 684, 242	673, 309	7, 820, 663
Chemical.....	308, 947	18, 660, 262	267, 050	16, 029, 485
Sulphite—				
Bleached—				
Dry.....	141, 779	10, 825, 775	148, 019	10, 583, 982
Wet.....	7, 516	270, 483	9, 422	320, 309
Unbleached—				
Dry.....	126, 465	6, 218, 249	81, 446	4, 108, 551
Wet.....	4, 718	121, 554	4, 466	124, 796
Sulphate—				
Dry.....	28, 468	1, 224, 201	23, 697	866, 453
Wet.....				
Cardboard.....	17, 628	1, 267, 648	16, 486	1, 155, 940
Paper.....	348, 400	24, 136, 812	325, 717	21, 144, 421
Printing.....	252, 572	15, 429, 266	238, 574	13, 628, 019
Wrapping paper.....	93, 977	8, 667, 722	85, 942	7, 488, 651
Other.....	1, 852	39, 824	1, 201	27, 751

¹ Norway, Norges Handel, 1929, pp. 89, 90.

² *Ibid*, 1930, pp. 89, 90.

In 1931 there were exported from Norway 285,441 short tons of mechanical pulp (dry weight) and 145,432 short tons of chemical pulp.²³ The decreased exports in 1931 were caused mainly by a strike in the Norwegian pulp industry which continued from March to September, 1931.

²³ Svensk Pappers Tidning, Mar. 15, 1932, p. 168.

Table 97 shows the quantity of wood pulp exported from Norway during the last three months of 1930 and 1931, and in January and February of 1931 and 1932.

TABLE 97.—Norway: Exports of wood pulp¹

(Tons of 2,000 pounds)

Kind of pulp	October		November		December		January		February	
	1931	1930	1931	1930	1931	1930	1932	1931	1932	1931
Mechanical.....	38,487	47,551	59,462	42,055	67,000	31,478	71,534	70,815	63,179	45,857
Chemical.....	18,013	17,637	20,111	17,080	23,015	19,340	21,824	10,757	30,172	20,824
Sulphite—										
Unbleached—										
Dry.....	5,817	4,177	0,085	4,070	4,145	4,082	0,389	0,222	8,866	5,634
Bleached—										
Dry.....	11,502	10,411	11,434	8,997	16,317	12,162	12,322	11,910	18,170	12,815
Wet.....	273	1,000	1,624	1,308	791	1,207	1,422	762	1,641	1,215
Sulphate—										
Unbleached—										
Dry.....	1,231	1,389	969	1,715	1,761	1,830	1,692	859	1,495	1,160

¹ Norway: Månedsopgaver over Vareomsætningen med Utlandet, December, 1931, p. 236; January, 1932 p. 18; February, 1932, p. 41.

The increased exports from Norway in the first two months of 1932 as compared with the corresponding months in 1931 are in part due to the fear of the imposition of duties on pulp by England. The outlook in the Norwegian pulp and paper market is now worse rather than better according to a radiogram received from Acting Commercial Attaché MacLean, Oslo, April 9, 1932. Buyers were reported as then purchasing only for immediate needs while unfilled orders on hand were decreasing.²⁴

The weekly report of the United States Legation at Oslo, Norway, for March 31, 1932, reviewed the financial results for 1931 of eight large wood pulp companies. With one exception all these companies reported their business to have been carried on at a loss in 1931. The exception was due to profits derived by one of the companies from a foreign operation. The situation in the pulp industry was reported as extremely unsatisfactory at the time the report was made.

Table 98 shows, for 1929 and 1930, the distribution of exports from Norway among the principal receiving countries.

²⁴ Slide Runs on the Paper Trade, Apr. 16, 1932.

TABLE 98.—Norway: Exports of wood pulp by countries of destination

[Tons of 2,000 pounds]

Kind of pulp and country from which exported	1929 ¹	1930 ²
Mechanical:		
White, dry, total.....	3, 047	3, 068
Chile.....	140	783
France.....	1, 039	719
Spain.....	1, 185	576
Greece.....	112	279
Argentina.....	123	173
Portugal and Madefra.....	(?)	166
Other.....	1, 348	370
White, wet, total.....	650, 000	669, 563
Great Britain.....	499, 130	522, 840
France.....	67, 442	81, 870
United States.....	29, 243	23, 568
Belgium.....	43, 575	22, 245
Denmark.....	10, 851	10, 645
Other.....	5, 765	8, 395
Chemical:		
Sulphite, bleached, dry, total.....	141, 779	148, 019
United States.....	37, 900	32, 091
Great Britain.....	25, 317	26, 914
France.....	10, 181	21, 235
Japan.....	12, 783	21, 067
Italy.....	9, 489	13, 595
Holland.....	9, 020	8, 083
Other.....	28, 089	24, 434
Sulphite, unbleached, dry, total.....	120, 465	81, 440
Great Britain.....	72, 215	47, 484
United States.....	20, 461	19, 121
British East India.....	11, 253	7, 502
Japan.....	4, 513	1, 609
France.....	3, 108	1, 572
Portugal and Madefra.....	784	1, 019
Other.....	14, 131	3, 079
Sulphite, bleached and unbleached, wet, total.....	12, 234	13, 888
United States.....	11, 062	8, 823
Great Britain.....	519	1, 244
Other.....	653	3, 821
Sulphate, unbleached, dry, total.....	28, 468	23, 697
United States.....	18, 470	15, 273
Great Britain.....	4, 578	5, 796
Germany.....	1, 613	1, 254
Other.....	3, 807	1, 374

¹ Norway, Norges Handel, 1929, pp. 173-174. Values not given.² *Ibid.*, 1930, pp. 173-174.³ Not separately reported.

APPENDIX

STATISTICAL TABLES

TABLE 99.—Wood pulp: Production by mills reporting to the Tariff Commission, by kinds of pulp, by regions,¹ 1929-1931

[Tons of 2,000 pounds]

Year	Region I	Region II	Region III ²	Region IV ²	Region V	Total
SULPHITE UNBLEACHED						
1929.....	208,430	130,329	1,686	.....	220,553	560,998
1930.....	202,897	113,756	676	.....	226,224	543,553
1931.....	168,582	93,851	240	.....	224,536	487,200
SULPHITE, BLEACHED						
1929.....	243,490	104,597	40,547	.....	90,858	479,492
1930.....	213,873	106,440	37,435	.....	112,954	470,702
1931.....	154,536	98,129	36,268	.....	134,649	423,572
SULPHATE, UNBLEACHED						
1929.....	.....	113,688	73,520	166,002	98,631	451,841
1930.....	.....	125,067	81,950	164,871	123,643	495,531
1931.....	.....	115,492	79,104	193,663	85,668	473,867
SODA, BLEACHED						
1929.....	246,128	.....	92,282	.....	.....	338,410
1930.....	216,111	.....	82,714	.....	.....	298,825
1931.....	168,211	.....	65,374	.....	.....	223,585
GROUND WOOD, UNBLEACHED						
1929.....	658,138	64,714	2,416	.....	217,119	942,387
1930.....	637,200	63,739	2,362	.....	217,523	920,824
1931.....	620,746	54,579	2,415	.....	176,074	853,814
GROUND WOOD, BLEACHED						
1929.....	.....	84,329	.....	.....	.....	84,329
1930.....	.....	79,521	.....	.....	.....	79,521
1931.....	.....	67,312	.....	.....	.....	67,312

¹ Region I includes Maine, New Hampshire, Vermont, Massachusetts, New York, Connecticut, Rhode Island, Pennsylvania, and New Jersey; Region II includes Minnesota, Michigan, Wisconsin, Illinois, Indiana, and Ohio; Region III includes Delaware, Maryland, West Virginia, Virginia, North Carolina, and South Carolina; Region IV includes Tennessee, Alabama, Mississippi, Louisiana, and Texas; Region V includes Washington, Oregon, and California.

² Data for Region III, except for unbleached sulphate, combined with those for Region IV to avoid disclosing individual mill operations.

TABLE 100.—Wood pulp: Production and shipments by pulp mills reporting to the Tariff Commission, by principal kinds and by months

[Tons of 2,000 pounds]

Year and month	Unbleached sulphite			Bleached sulphite			Unbleached sulphate			Bleached soda			Unbleached ground wood		
	Production	Shipments to paper mills		Production	Shipments to paper mills		Production	Shipments to paper mills		Production	Shipments to paper mills		Production	Shipments to paper mills	
		Affiliated	Unaffiliated		Affiliated	Unaffiliated		Affiliated	Unaffiliated		Affiliated	Unaffiliated		Affiliated	Unaffiliated
1929															
January.....	48,206	37,322	8,014	39,360	27,355	8,384	36,048	35,202	1,060	27,966	20,733	5,861	38,997	88,408	900
February.....	41,784	32,231	6,447	36,053	25,580	9,131	34,788	34,993	1,094	25,968	19,090	6,639	77,263	76,364	573
March.....	45,599	33,730	8,329	39,848	28,329	9,810	37,538	36,677	877	28,164	19,927	6,785	38,447	86,175	650
April.....	47,839	34,878	9,646	41,437	28,657	10,592	37,912	39,136	340	28,078	20,351	5,925	95,584	92,356	561
May.....	49,399	35,676	8,922	42,550	28,530	12,073	40,126	39,588	601	29,400	21,628	7,031	96,660	94,956	475
June.....	46,003	33,004	9,025	37,789	25,159	13,349	38,447	37,685	790	28,419	20,573	6,592	86,026	84,327	455
July.....	44,554	32,063	8,349	38,829	26,382	11,210	39,370	38,125	843	28,621	21,271	6,303	72,861	73,132	485
August.....	47,581	34,735	9,004	41,455	28,224	10,164	40,174	40,297	982	30,017	21,926	6,909	68,310	71,398	905
September.....	44,532	32,303	8,501	40,179	27,561	9,721	36,929	36,936	1,094	26,412	20,264	5,492	61,434	63,528	1,228
October.....	50,325	36,490	9,962	44,589	29,707	11,076	39,658	39,892	1,421	30,153	23,050	5,956	69,153	70,147	1,571
November.....	48,884	35,461	8,887	40,010	26,958	10,102	37,393	36,082	678	28,488	21,411	6,255	66,424	65,258	2,171
December.....	46,292	32,401	8,314	37,393	26,509	7,517	33,458	33,795	338	26,724	19,807	6,023	71,228	69,014	1,786
Total.....	560,998	410,294	103,400	479,492	328,951	123,129	451,841	448,408	10,118	338,410	250,031	75,771	942,387	935,063	11,760
1930															
January.....	50,852	37,387	10,749	41,276	29,443	9,645	36,996	37,583	245	29,733	21,650	7,072	76,563	73,963	1,153
February.....	45,525	33,739	8,851	38,988	27,066	10,850	38,165	36,918	226	27,038	19,596	5,640	76,005	74,424	1,197
March.....	50,884	36,464	10,688	42,429	29,183	11,224	42,393	41,278	203	29,574	21,948	6,184	93,163	88,672	972
April.....	49,057	36,599	8,197	40,576	30,004	10,224	42,565	42,223	139	28,383	21,778	5,842	95,232	91,806	725
May.....	47,294	35,609	7,598	40,138	29,305	10,286	43,464	42,481	296	29,063	21,400	6,564	96,207	92,189	727
June.....	43,234	32,920	7,557	36,327	25,597	8,976	40,810	30,564	18	24,739	18,492	5,393	86,093	83,063	912
July.....	44,623	33,238	9,201	34,776	25,593	8,155	41,443	41,128	15	22,570	17,004	4,183	69,232	69,393	390
August.....	44,378	34,185	6,457	41,989	26,714	11,127	43,967	43,068	36	21,119	16,008	4,272	64,002	65,190	544
September.....	42,589	32,356	7,082	39,500	26,816	10,240	42,567	39,866	15	21,008	15,667	4,527	60,866	63,562	636
October.....	45,502	35,337	6,767	44,000	27,951	11,381	46,276	44,300	16	22,899	17,139	5,220	63,951	66,364	797
November.....	40,148	30,939	6,973	35,983	22,907	12,078	41,110	40,193	-----	20,725	15,611	4,599	66,308	65,263	689
December.....	39,467	30,336	7,248	34,720	22,547	10,625	35,875	35,926	26	21,974	17,009	3,593	73,202	72,632	707
Total.....	543,553	409,009	97,368	470,702	323,146	124,811	496,631	484,528	1,235	298,825	223,297	63,089	920,824	906,541	9,449

TABLE 100.—Wood pulp: Production and shipments by pulp mills reporting to the Tariff Commission, by principal kinds and by months—Con.

[Tons of 2,000 pounds]

Year and month	Unbleached sulphite			Bleached sulphite			Unbleached sulphate			Bleached soda			Unbleached ground wood		
	Production	Shipments to paper mills		Production	Shipments to paper mills		Production	Shipments to paper mills		Production	Shipments to paper mills		Production	Shipments to paper mills	
		Affiliated	Unaffiliated		Affiliated	Unaffiliated		Affiliated	Unaffiliated		Affiliated	Unaffiliated		Affiliated	Unaffiliated
1931															
January.....	40,857	32,393	6,251	35,717	24,834	12,866	38,217	38,238		21,431	17,411	3,249	76,732	76,154	1,367
February.....	38,297	28,948	7,960	36,809	24,171	16,120	37,812	38,040		20,980	16,417	3,547	68,574	67,575	1,216
March.....	38,504	28,868	6,608	37,582	24,022	17,810	43,895	43,746	28	22,415	17,017	3,588	79,127	77,017	1,426
April.....	44,234	31,081	9,781	35,050	22,554	15,337	39,409	40,337	15	20,969	16,523	3,176	80,679	76,688	604
May.....	42,788	28,381	9,182	35,737	22,897	14,669	45,685	46,274	17	19,507	15,629	3,241	81,752	76,943	676
June.....	45,409	30,367	10,169	35,661	22,844	10,593	40,632	42,004		19,927	15,565	2,521	73,966	70,944	891
July.....	43,736	30,582	9,719	35,317	22,085	11,969	42,633	43,340	4	17,090	14,357	2,465	66,012	65,144	996
August.....	39,591	29,275	7,853	37,820	21,269	15,914	39,144	40,766		18,171	15,278	2,358	60,142	59,733	882
September.....	39,433	28,678	8,541	35,593	20,769	13,367	36,334	38,756	20	15,811	12,702	2,191	61,977	61,181	1,194
October.....	39,724	28,420	7,190	35,123	20,826	12,316	41,570	42,111	369	15,053	12,121	2,289	65,936	65,220	803
November.....	37,994	26,875	6,437	32,109	17,739	9,827	36,332	36,961	590	14,736	12,197	2,097	69,613	67,551	631
December.....	36,642	25,387	6,187	31,054	18,921	11,010	32,204	31,913	18	17,495	14,367	1,662	69,304	67,677	522
Total.....	487,209	349,255	95,878	423,572	262,931	161,818	473,867	482,486	1,051	223,585	179,584	32,384	853,814	831,827	11,148

WOOD PULP AND PULPWOODS

TABLE 101.—Wood pulp: Shipments by pulp mills reporting to the Tariff Commission to affiliated and unaffiliated domestic paper mills, by kinds, 1929-1931

[Thousands of short tons]

	1929		1930		1931		Per cent to unaffiliated mills		
	Affiliated	Unaffiliated	Affiliated	Unaffiliated	Affiliated	Unaffiliated	1929	1930	1931
By kinds:									
Sulphite—									
Unbleached.....	410.3	103.4	409.0	97.3	349.3	95.9	20.1	19.2	21.5
Bleached.....	329.0	123.1	323.1	124.8	262.9	161.8	27.2	27.3	38.1
Sulphate—									
Unbleached.....	448.4	10.1	484.5	1.2	482.5	1.0	2.2	.3	.2
Bleached.....	16.9	.....	22.9	.....	20.3	.....	.....	.....	.....
Soda, bleached.....	250.0	75.8	223.3	63.1	179.6	32.4	23.3	22.0	15.3
Total chemical.....	1,464.6	312.4	1,462.8	286.4	1,294.6	291.1	17.7	16.3	18.4
Ground wood—									
Unbleached.....	935.1	11.8	906.5	0.5	831.8	11.1	1.2	1.0	1.3
Bleached ¹	(1)	.....	.....	.....	63.5	.....	.....	.....	.....
Total.....	2,389.7	324.2	2,369.3	295.9	2,189.9	302.2	11.9	11.1	12.1
By regions:²									
All kinds combined—									
Region I.....	1,250.0	118.2	1,181.4	97.9	1,036.2	67.2	8.6	8.3	7.0
Region II.....	358.2	51.9	382.7	34.8	407.8	28.2	12.7	8.4	6.5
Regions III and IV.....	334.6	30.4	332.2	24.3	351.4	14.6	8.3	6.9	3.9
Region V.....	446.9	123.7	473.0	139.0	394.5	192.2	21.7	22.7	32.8
Total.....	2,389.7	324.2	2,369.3	295.9	2,189.9	302.2	11.9	11.1	12.1
All chemical:									
Region I.....	589.0	116.1	548.5	95.2	427.0	62.0	16.5	14.8	12.7
Region II.....	266.3	45.4	322.6	29.8	294.4	24.8	13.3	8.5	7.8
Regions III and IV.....	334.6	28.7	332.2	22.5	351.0	12.6	7.9	0.4	3.5
Region V.....	234.7	122.2	259.5	139.0	222.2	191.7	34.2	34.9	46.3
Total.....	1,454.6	312.4	1,462.8	286.4	1,294.6	291.1	17.7	16.3	18.4

¹ Shipments to unaffiliated mills of bleached ground wood are omitted in 1929 and 1930 so as to not reveal individual operations. Shipments to affiliated mills for same kind of pulp are also omitted so that totals will be comparable.

² Region I includes Maine, New Hampshire, Vermont, Massachusetts, New York, Connecticut, Rhode Island, Pennsylvania, and New Jersey; Region II includes Minnesota, Michigan, Wisconsin, Illinois, Indiana, and Ohio; Region III includes Delaware, Maryland, West Virginia, Virginia, North Carolina, and South Carolina; Region IV includes Tennessee, Alabama, Mississippi, Louisiana, and Texas; Region V includes Washington, Oregon, and California.

TABLE 102.—Wood pulp: Average unit value of the principal kinds, for deliveries to affiliated and for sales to unaffiliated paper mills by pulp mills reporting to the Tariff Commission in each of the principal regions,¹ by quarters

[Data for Regions III and IV omitted to avoid disclosing operations of individual mills]

[Tons of 2,000 pounds]

SULPHITE, UNBLEACHED

Year and quarter	Region I		Region II		Region V		Average, all regions	
	Affiliated	Unaffiliated	Affiliated	Unaffiliated	Affiliated	Unaffiliated	Affiliated	Unaffiliated
1929								
January-March.....	\$51.74	\$53.94	\$49.33	\$53.55	\$29.63	\$51.09	\$44.49	\$52.32
April-June.....	51.52	54.84	51.59	53.01	29.74	51.43	44.87	52.63
July-September.....	52.40	54.17	49.56	53.46	29.77	51.65	44.10	52.69
October-December.....	52.32	53.16	49.57	53.62	29.54	52.28	44.23	52.82
Average.....	51.99	54.10	49.79	53.40	29.69	51.67	44.43	52.63
1930								
January-March.....	50.54	53.20	49.89	52.85	30.15	51.67	43.93	52.27
April-June.....	50.16	52.89	49.20	53.12	30.00	48.44	43.34	50.33
July-September.....	50.23	51.26	49.24	52.06	30.07	43.60	43.73	46.22
October-December.....	50.11	49.65	49.03	50.04	29.93	40.57	43.43	43.22
Average.....	50.27	52.12	49.35	52.71	30.04	46.16	43.61	48.44
1931								
January-March.....	47.26	49.09	47.93	47.57	27.90	39.54	41.20	41.66
April-June.....	46.69	44.46	46.57	47.50	27.90	40.61	40.28	42.04
July-September.....	46.60	44.10	46.96	46.25	27.76	39.63	40.01	41.22
October-December.....	47.10	45.95	46.11	44.69	27.82	36.30	40.50	38.82
Average.....	46.92	45.47	46.92	46.44	27.84	39.19	40.50	41.03

SULPHITE, BLEACHED

1929								
January-March.....	\$73.79	\$76.85	\$64.55	\$73.32	\$52.73	\$64.34	\$71.18	\$69.46
April-June.....	73.78	76.53	63.99	72.85	52.73	62.90	70.73	63.49
July-September.....	74.06	75.67	64.80	72.38	52.73	61.81	71.16	67.67
October-December.....	73.82	73.66	65.00	72.25	52.73	61.81	70.97	67.01
Average.....	73.86	75.50	64.59	72.70	52.73	62.68	71.01	68.15
1930								
January-March.....	73.21	70.78	64.03	73.09	46.08	60.06	69.86	65.59
April-June.....	72.13	68.55	63.06	72.36	46.08	57.01	68.26	62.01
July-September.....	71.84	66.83	63.99	69.12	46.08	53.00	67.16	58.18
October-December.....	71.59	61.93	63.85	65.36	46.08	50.42	66.92	54.07
Average.....	72.25	67.68	63.88	70.12	46.08	54.60	68.11	59.84
1931								
January-March.....	66.81	59.55	60.22	61.74	38.45	48.67	62.69	51.43
April-June.....	66.00	57.95	60.04	59.31	37.66	48.35	61.68	50.90
July-September.....	65.67	55.74	59.96	60.03	37.67	46.54	61.20	48.65
October-December.....	64.94	51.66	60.37	51.49	37.69	44.31	61.01	46.22
Average.....	66.90	56.51	60.14	57.43	37.86	47.17	61.70	49.52

¹ Region I includes Maine, New Hampshire, Vermont, Massachusetts, New York, Connecticut, Rhode Island, Pennsylvania, and New Jersey; Region II includes Minnesota, Michigan, Wisconsin, Illinois, Indiana, and Ohio; Region III includes Delaware, Maryland, West Virginia, Virginia, North Carolina, and South Carolina; Region IV includes Tennessee, Alabama, Mississippi, Louisiana, and Texas; Region V includes Washington, Oregon, and California.

TABLE 102.—Wood pulp: Average unit value of the principal kinds, for deliveries to affiliated and for sales to unaffiliated paper mills by pulp mills reporting to the Tariff Commission in each of the principal regions, by quarters ¹—Continued

(Tons of 2,000 pounds)

SULPHATE, UNBLEACHED

Year and quarter	Region I ²		Region II		Region V ³		Average, all regions	
	Affiliated	Unaffiliated	Affiliated	Unaffiliated	Affiliated	Unaffiliated	Affiliated	Unaffiliated
1929								
January-March.....			\$50.22	\$51.99	\$39.42		\$41.59	\$49.43
April-June.....			49.88	51.54	39.77		41.19	50.61
July-September.....			49.07	51.55	40.35		41.03	45.76
October-December.....			48.71	53.43	41.80		41.58	41.64
Average.....			49.47	51.90	40.40		41.34	46.70
1930								
January-March.....			46.98	54.27	37.35		40.75	50.19
April-June.....			45.72	45.72	36.07		37.70	45.81
July-September.....			46.03	50.00	35.53		37.16	50.00
October-December.....			46.78	45.00	35.95		37.13	43.96
Average.....			46.38	50.29	36.21		38.15	48.36
1931								
January-March.....			43.48	33.88	29.52		32.84	33.88
April-June.....			41.53	37.02	30.10		31.94	37.10
July-September.....			41.60		30.33		30.80	19.87
October-December.....			41.63	32.50	29.63		31.27	24.96
Average.....			42.08	32.75	29.91		31.72	25.46

GROUND WOOD, UNBLEACHED

1929								
January-March.....	\$25.10	\$20.00	\$27.16	\$33.34	\$17.82		\$23.24	\$31.96
April-June.....	24.85	25.00	28.38	32.73	18.00		23.15	31.42
July-September.....	25.15	28.62	27.01	32.29	18.90		24.24	30.91
October-December.....	25.58	28.37	27.08	33.96	18.92		24.61	30.56
Average.....	25.16	28.04	27.43	33.18	18.23		23.74	30.98
1930								
January-March.....	26.17	30.48	29.69	32.98	17.61		23.95	31.50
April-June.....	25.09	30.16	28.05	32.96	17.20		23.08	31.78
July-September.....	25.44	27.67	28.82	33.55	18.36		24.57	31.17
October-December.....	25.47	29.02	31.07	33.45	17.75		24.33	31.23
Average.....	25.52	29.72	29.40	33.20	17.60		23.92	31.38
1931								
January-March.....	23.50	28.58	30.30	33.44	17.11		22.13	30.03
April-June.....	23.48	29.93	27.92	33.43	16.88		22.32	29.76
July-September.....	23.30	28.93	27.74	31.15	17.75		22.72	27.24
October-December.....	23.39	30.94	27.68	30.44	17.39		22.63	26.74
Average.....	23.42	29.15	28.44	32.11	17.21		22.43	28.65

¹ Region I includes Maine, New Hampshire, Vermont, Massachusetts, New York, Connecticut, Rhode Island, Pennsylvania, and New Jersey; Region II includes Minnesota, Michigan, Wisconsin, Illinois, Indiana, and Ohio; Region III includes Delaware, Maryland, West Virginia, Virginia, North Carolina, and South Carolina; Region IV includes Tennessee, Alabama, Mississippi, Louisiana, and Texas; Region V includes Washington, Oregon, and California.

² Not shown for 1929 to avoid disclosing operations of individual mills; none in other years.

³ Not shown to avoid disclosing operations of individual mills.

TABLE 103.—Quantity and unit value of imports of unbleached sulphite, by principal countries of origin, by months

Year and month	Sulphite, unbleached							
	Quantity (short tons)				Unit value (per short ton)			
	Total	Sweden	Finland	Canada	Total	Sweden	Finland	Canada
1930								
January.....	97,570	65,598	7,187	20,089	\$46.00	\$47.18	\$44.66	\$41.73
February.....	85,163	48,483	13,604	17,090	46.24	46.72	46.38	44.39
March.....	45,624	11,451	8,148	10,761	46.16	47.79	45.02	44.32
April.....	41,621	10,789	8,429	16,594	45.27	47.60	43.72	43.38
May.....	47,244	18,918	7,096	15,026	46.30	47.86	44.22	44.34
June.....	64,686	32,143	8,622	18,077	45.03	47.23	44.85	40.77
July.....	57,317	28,100	8,855	15,798	45.86	47.17	44.69	43.36
August.....	59,078	32,551	9,614	13,983	44.85	46.32	39.52	44.55
September.....	52,426	27,458	7,864	13,500	44.30	45.94	42.25	41.03
October.....	52,286	25,916	7,819	12,372	41.73	41.34	42.97	40.05
November.....	76,850	44,065	13,317	17,241	41.55	43.86	40.24	36.24
December.....	63,870	36,079	11,292	11,316	41.50	42.06	40.06	41.58
1931								
January.....	87,600	65,392	10,498	8,898	41.16	41.12	40.57	40.90
February.....	51,018	31,921	3,752	11,792	38.02	37.79	36.57	38.65
March.....	34,289	6,104	9,088	12,368	39.46	43.20	38.91	39.94
April.....	30,724	4,931	9,617	9,707	36.40	44.21	31.46	37.47
May.....	31,386	13,452	7,358	8,354	38.17	39.76	34.52	38.94
June.....	52,745	27,475	12,905	9,283	37.29	39.34	32.55	38.62
July.....	52,061	29,673	7,928	8,024	37.28	36.88	39.09	38.00
August.....	49,334	32,169	5,911	5,429	38.28	38.61	42.05	36.06
September.....	49,314	29,398	9,116	6,479	38.61	39.28	40.55	34.64
October.....	53,014	29,882	8,509	7,883	37.17	36.88	40.93	34.92
November.....	62,058	36,795	17,352	5,439	36.82	35.87	40.08	35.21
December.....	46,789	29,571	7,129	5,581	35.85	35.22	36.77	36.31
1932								
January ¹	94,555	75,768	8,133	5,067	32.93	33.22	33.59	33.56
February ¹	80,606	62,440	6,748	5,401	33.25	33.21	37.19	32.49
March ¹	34,388	10,438	10,381	6,602	31.43	28.60	37.14	31.24

¹ Preliminary.

TABLE 104.—Quantity and unit value of imports of bleached sulphite, by principal countries of origin, by months

Month	Sulphite, bleached							
	Quantity (short tons)				Unit value (short tons)			
	Total	Canada	Sweden	Germany	Total	Canada	Sweden	Germany
1930								
January.....	29,593	16,880	3,468	3,982	\$66.54	\$67.66	\$67.71	\$65.04
February.....	35,999	20,438	3,470	7,040	64.73	65.59	64.77	64.04
March.....	32,546	18,981	2,621	8,058	66.71	67.75	67.05	64.38
April.....	30,153	17,466	3,966	3,955	64.21	65.96	64.50	63.63
May.....	25,591	14,731	4,124	1,691	64.64	66.86	63.70	64.92
June.....	30,956	15,548	5,553	2,164	61.61	66.33	58.29	65.07
July.....	28,255	16,722	3,136	3,741	62.79	64.06	63.12	60.63
August.....	26,880	15,816	3,912	4,152	63.45	65.11	61.63	64.78
September.....	30,511	16,507	3,563	4,982	61.46	62.10	63.66	62.54
October.....	30,457	17,905	5,191	4,002	62.21	62.44	61.03	62.87
November.....	30,371	17,033	5,812	3,165	57.46	59.54	53.44	56.27
December.....	30,322	14,879	4,899	4,694	58.02	61.54	57.60	56.31
1931								
January.....	36,095	12,496	14,711	3,693	62.52	61.12	44.55	60.82
February.....	25,592	15,076	4,104	3,564	56.17	61.96	46.40	51.07
March.....	32,863	17,450	2,074	6,651	57.36	59.88	53.85	56.36
April.....	30,511	18,291	3,892	4,953	56.88	59.54	53.96	55.52
May.....	28,500	17,835	4,452	4,168	55.84	59.25	48.72	52.68
June.....	29,558	19,113	3,642	4,760	54.08	56.74	47.99	53.40
July.....	23,109	15,138	2,519	3,504	55.35	57.00	53.76	51.89
August.....	29,510	18,963	3,854	5,085	50.46	51.15	47.52	51.84
September.....	31,939	17,613	4,753	5,851	50.35	52.33	47.29	51.66
October.....	29,169	16,679	3,044	5,305	48.42	53.04	41.71	43.85
November.....	31,910	24,175	4,610	2,620	49.05	49.62	46.03	48.92
December.....	25,288	14,413	3,295	2,661	47.97	60.72	42.23	48.01
1932								
January ¹	34,372	13,293	8,914	4,225	43.43	49.49	37.14	45.47
February ¹	38,528	17,153	8,148	5,219	43.94	51.34	36.22	40.67
March ¹	32,197	17,195	4,490	3,211	41.52	46.75	32.04	38.22

¹ Preliminary.

TABLE 105.—Wood pulp: Quantity and unit value of United States imports of unbleached sulphate, by principal countries of origin, by months

Month	Sulphate, unbleached (Kraft)							
	Quantity (tons of 2,000 pounds)				Unit value (per short ton)			
	Total	Sweden	Finland	Canada	Total	Sweden	Finland	Canada
1930								
January	42,712	31,259	1,907	8,390	\$46.72	\$44.98	\$40.23	\$54.96
February	56,112	39,956	5,687	7,707	43.41	41.46	43.37	54.08
March	22,671	6,633	5,730	8,672	46.71	44.43	37.33	54.63
April	19,202	7,464	2,341	6,593	47.30	44.11	39.54	56.69
May	25,379	12,332	4,424	6,972	43.15	38.78	42.63	52.90
June	29,884	20,897	2,938	5,245	44.71	43.81	39.44	51.99
July	23,201	15,256	1,559	5,051	42.14	38.90	34.52	55.48
August	38,644	27,068	4,072	5,741	39.00	37.27	32.17	54.05
September	30,416	22,504	2,048	5,030	37.97	33.57	32.39	56.80
October	22,361	15,030	1,540	4,250	38.53	31.97	41.73	58.10
November	43,555	34,168	2,768	4,652	34.51	31.42	32.64	57.43
December	46,119	38,568	2,213	4,666	35.09	32.48	33.55	57.72
1931								
January	34,577	28,800	599	4,227	35.71	33.33	35.60	53.23
February	34,217	26,854	1,689	4,424	36.56	33.59	26.96	60.99
March	10,690	4,500	2,130	3,361	39.46	32.81	29.36	56.57
April	13,411	3,923	5,079	4,351	37.71	31.41	26.13	56.79
May	13,403	7,950	2,709	2,569	32.49	29.35	23.98	51.58
June	29,025	21,557	6,244	1,224	30.12	29.21	29.06	47.24
July	42,953	33,504	7,768	1,457	28.01	26.88	27.05	54.66
August	36,468	29,543	4,638	1,933	29.62	28.40	27.48	52.86
September	37,535	27,760	6,495	3,162	30.54	26.85	33.60	56.82
October	30,682	19,533	5,041	5,041	30.47	27.66	28.09	42.57
November	65,940	50,503	12,181	2,626	28.67	26.82	30.60	55.21
December	36,655	28,068	5,537	1,105	28.47	27.49	29.72	51.51
1932								
January ¹	62,681	53,936	6,732	1,240	27.63	27.23	28.85	38.43
February ¹	43,661	41,484	4,048	2,034	27.32	26.50	29.21	41.19
March ¹	19,509	9,305	6,205	1,683	29.25	27.09	29.73	44.25

¹ Preliminary.

TABLE 106.—Wood pulp: Quantity and unit value of United States imports of bleached sulphate, by principal countries of origin, by months

Month	Sulphate, bleached					
	Quantity (tons of 2,000 pounds)			Unit value (per short ton)		
	Total	Canada	Sweden	Total	Canada	Sweden
1930						
January	1,232	672	56	\$76.56	\$83.21	\$52.04
February	1,242	643	112	71.86	82.04	68.21
March	822	336	31	67.53	82.44	55.68
April	923	467	112	70.03	77.43	74.17
May	1,870	1,276	224	76.73	83.44	66.27
June	2,565	522	1,904	52.79	82.19	44.41
July	1,202	879	56	70.30	84.37	62.39
August	744	679	-----	85.09	87.84	-----
September	1,611	1,320	-----	77.59	84.29	-----
October	4,389	2,804	1,202	66.47	83.37	32.59
November	837	837	-----	78.11	78.11	-----
December	4,441	2,080	2,125	55.24	77.29	33.88
1931						
January	8,879	1,949	6,803	43.35	80.75	32.60
February	1,821	1,494	246	70.54	76.54	31.58
March	3,499	3,111	54	79.22	82.33	47.08
April	2,405	1,739	122	70.70	81.71	49.84
May	1,980	1,326	170	74.16	85.14	63.00
June	2,344	2,091	90	80.44	84.21	60.27
July	1,048	1,417	-----	79.77	85.29	-----
August	1,455	1,064	283	66.11	79.96	25.49
September	1,300	1,160	-----	79.65	83.93	-----
October	2,225	2,121	-----	78.33	80.14	-----
November	1,938	1,859	20	82.96	84.12	71.53
December	3,841	3,610	63	81.23	83.10	48.88
1932						
January ¹	2,036	1,410	168	73.99	81.71	20.80
February ¹	2,841	2,766	-----	79.76	80.92	-----
March ¹	2,400	2,225	86	76.83	79.67	40.79

¹ Preliminary.

TABLE 107.—Wood pulp: Quantity and unit value of United States imports of unbleached ground wood, by principal countries of origin, by months

Month	Mechanically ground, unbleached					
	Quantity (tons of 2,000 pounds)			Unit value (per short ton)		
	Total	Canada	Finland	Total	Canada	Finland
1930						
January.....	27,182	25,324	1,356	\$26.39	\$26.51	\$24.07
February.....	29,477	24,222	1,092	24.88	25.36	24.30
March.....	26,391	22,606	696	26.19	26.47	24.24
April.....	20,070	18,608	1,039	22.82	22.78	23.77
May.....	17,002	15,546	1,104	24.83	25.09	24.05
June.....	18,176	15,789	1,315	24.58	24.67	23.57
July.....	16,763	15,226	445	25.20	25.36	23.54
August.....	19,482	18,552	560	21.91	22.00	22.88
September.....	29,278	26,533	56	22.51	22.86	25.66
October.....	30,745	29,058	1,422	23.15	23.21	22.88
November.....	20,461	18,600	1,376	23.43	23.54	22.29
December.....	26,450	24,409	1,364	21.27	21.21	24.31
1931						
January.....	12,975	11,089	758	23.78	24.02	20.56
February.....	14,810	14,270	540	24.44	24.46	23.69
March.....	14,430	13,367	849	20.74	20.74	21.46
April.....	22,621	21,379	741	21.35	21.54	21.39
May.....	11,599	11,001	424	24.07	24.10	23.04
June.....	12,579	11,682	132	23.08	23.37	17.33
July.....	15,144	12,543	1,117	24.67	24.47	27.28
August.....	13,929	12,544	1,006	21.38	21.15	25.00
September.....	17,761	16,585	497	20.05	19.79	25.62
October.....	20,694	19,851	278	19.37	19.27	23.67
November.....	20,420	18,068	1,762	17.48	16.59	27.05
December.....	20,399	18,607	510	19.79	19.73	23.93
1932						
January.....	16,586	14,018	569	18.11	18.42	24.23
February.....	17,956	13,848	3,194	17.37	16.70	20.45
March ¹	12,061	10,823	468	18.57	18.75	21.92

¹ Preliminary.

TABLE 108.—Wood pulp: Quantity and unit value of United States imports of bleached ground wood, by principal countries of origin, by months

Month	Mechanically ground, bleached					
	Quantity (tons of 2,000 pounds)			Unit value (per short ton)		
	Total	Norway	Sweden	Total	Norway	Sweden
1930						
January.....	1,261	802	.....	\$17.31	\$12.84	.....
February.....	9,628	6,373	3,255	24.16	23.74	\$24.99
March.....	670	196	474	25.76	25.62	25.81
April.....	563	224	57	25.27	25.25	27.84
May.....	368	224	21	20.93	18.83	25.94
June.....	357	253	18	23.54	22.52	30.30
July.....	423	199	224	21.85	18.25	25.04
August.....	1,779	728	363	24.66	23.19	20.97
September.....	280	.....	224	24.98	.....	25.04
October.....	560	280	280	22.64	22.86	22.44
November.....	1,315	252	.....	23.73	22.31	.....
December.....	575	575	.....	15.87	15.87	.....
1931						
January.....	1,419	224	159	22.62	22.87	23.88
February.....	847	252	.....	21.71	22.80	.....
March.....	222	112	24	20.84	20.77	23.72
April.....	515	168	28	21.04	20.22	20.57
May.....	1,252	498	202	19.67	19.18	20.38
June.....	933	140	624	23.29	22.82	24.11
July.....	2,582	1,054	655	21.97	18.77	20.88
August.....	479	84	337	21.62	20.57	20.96
September.....	904	848	56	21.84	21.98	19.64
October.....	1,148	252	784	22.36	20.14	22.38
November.....	646	461	185	19.71	19.81	19.43
December.....	2,359	952	1,208	20.88	19.81	19.96
1932						
January.....	753	241	73	20.87	19.54	22.97
February.....	1,172	796	375	17.73	17.52	18.21
March ¹	374	302	.....	20.91	21.53	.....

¹ Preliminary.

TABLE 109.—Wood pulp: Receipts of paper mills reporting to the Tariff Commission, by sources, for each month 1929-1931

[Tons of 2,000 pounds]

Year and month	All kinds				Total chemical			
	From domestic mills		From foreign mills, affiliated and unaffiliated	Total	From domestic mills		From foreign mills, affiliated and unaffiliated	Total
	Affiliated	Unaffiliated			Affiliated	Unaffiliated		
1929								
January.....	18,568	18,023	61,765	98,356	13,443	17,845	55,236	86,524
February.....	16,582	18,495	53,224	88,301	12,056	18,221	48,131	78,408
March.....	17,763	19,641	55,419	92,823	12,851	19,390	47,790	80,031
April.....	17,641	18,760	56,251	92,552	13,175	18,620	50,442	82,239
May.....	18,153	20,337	65,743	104,233	13,895	20,143	55,838	89,876
June.....	18,063	18,615	70,043	106,721	14,450	18,470	63,658	96,578
July.....	18,919	19,001	60,593	99,413	15,748	19,804	54,404	89,958
August.....	22,261	19,206	58,825	100,292	18,699	18,981	52,789	90,469
September.....	19,957	19,154	63,429	102,540	16,421	18,810	56,571	91,802
October.....	21,819	20,216	61,618	103,653	17,858	20,027	56,799	94,684
November.....	21,260	18,966	55,160	95,386	18,286	18,543	48,298	85,127
December.....	18,171	17,974	68,397	104,542	14,965	17,412	58,616	90,993
Total.....	220,057	229,288	730,467	1,188,812	181,847	226,266	648,572	1,056,685
1930								
January.....	21,871	18,517	58,265	98,653	18,766	18,156	50,820	87,742
February.....	20,773	17,696	51,479	89,948	17,931	17,374	46,368	81,703
March.....	20,224	18,995	61,928	101,147	17,282	18,636	54,069	89,987
April.....	18,991	17,385	46,743	82,119	16,169	17,064	39,909	73,142
May.....	21,459	17,098	46,226	84,783	18,835	16,932	39,330	76,097
June.....	22,726	15,220	69,871	97,817	19,850	14,911	51,661	86,422
July.....	14,852	12,718	48,615	76,185	12,280	12,412	43,718	68,410
August.....	13,911	14,879	53,365	82,155	12,127	14,411	46,889	73,427
September.....	15,191	12,064	58,344	85,599	13,101	11,798	50,631	75,530
October.....	15,711	14,199	56,271	86,181	13,539	13,739	46,387	73,665
November.....	13,261	13,606	54,176	81,043	10,947	13,419	48,641	73,007
December.....	15,449	13,632	68,564	97,645	12,666	13,479	56,078	82,223
Total.....	214,419	186,009	602,847	1,063,275	183,493	182,331	574,531	940,355
1931								
January.....	14,438	15,962	50,561	80,961	11,404	15,632	47,168	74,204
February.....	14,612	17,130	55,053	86,795	11,475	16,864	51,955	80,294
March.....	15,101	19,762	67,877	102,740	11,812	19,578	61,277	92,667
April.....	15,853	16,465	51,244	83,562	11,794	16,144	46,849	74,787
May.....	13,921	18,325	51,202	83,448	10,291	18,113	49,298	77,702
June.....	13,703	16,794	67,737	98,234	10,433	16,550	62,732	89,715
July.....	12,310	13,921	60,397	86,628	9,211	13,739	57,933	80,883
August.....	12,388	14,203	52,058	78,649	9,253	13,828	50,224	73,305
September.....	13,266	14,891	61,529	89,686	10,077	14,656	55,218	79,951
October.....	13,576	14,352	56,532	84,460	10,463	14,199	51,688	76,350
November.....	13,850	14,970	67,700	96,520	10,806	14,537	61,348	86,491
December.....	13,730	13,353	63,154	90,237	10,666	13,110	56,723	80,499
Total.....	166,748	190,128	705,044	1,061,020	127,485	186,950	652,413	966,848

NOTE.—Paper mills reporting to the Tariff Commission include relatively few "integrated" mills, and are not representative of the entire industry.

TABLE 110.—Wood pulp: Receipts of unbleached sulphite and of bleached sulphite by paper mills reporting to the Tariff Commission, by sources, for each month, 1929-1931

[Tons of 2,000 pounds]

Year and month	Sulphite, unbleached				Sulphite, bleached			
	From domestic mills		From foreign mills, affiliated and unaffiliated	Total	From domestic mills		From foreign mills, affiliated and unaffiliated	Total
	Affiliated	Unaffiliated			Affiliated	Unaffiliated		
1929								
January.....	1,277	1,588	22,754	25,619	4,514	10,373	13,594	28,481
February.....	761	1,590	23,231	25,582	4,240	10,427	9,947	24,623
March.....	795	1,423	21,168	23,386	3,840	10,872	11,843	26,555
April.....	992	1,867	22,290	25,149	4,500	10,450	12,548	27,468
May.....	910	2,262	25,170	28,342	4,367	11,380	12,483	28,230
June.....	760	1,971	27,461	30,192	4,172	10,405	15,491	30,088
July.....	677	1,085	23,044	25,706	4,099	11,271	10,661	26,031
August.....	687	2,151	23,331	26,169	5,193	10,501	12,500	28,194
September.....	976	2,232	27,639	30,847	4,696	10,201	11,450	26,347
October.....	1,720	2,610	27,210	31,540	4,846	10,816	13,262	28,924
November.....	1,802	3,036	22,309	27,177	5,110	9,908	10,540	25,558
December.....	1,294	2,357	28,822	32,473	4,765	9,229	13,755	27,749
Total.....	12,651	25,102	294,429	332,182	54,351	125,833	148,074	328,258
1930								
January.....	1,151	2,455	22,679	26,285	5,848	9,582	11,119	26,549
February.....	962	2,295	22,553	25,810	5,225	9,887	11,006	26,118
March.....	547	2,334	24,090	26,971	5,263	10,877	14,846	30,986
April.....	473	2,143	18,558	21,174	5,469	9,989	12,166	27,624
May.....	1,185	2,136	21,185	24,506	5,215	9,844	10,389	25,448
June.....	943	1,912	25,731	28,586	4,812	9,066	11,814	25,692
July.....	542	1,382	20,664	22,588	4,242	7,709	11,898	23,849
August.....	841	1,991	18,370	21,202	4,684	9,433	10,344	24,461
September.....	733	1,149	25,125	27,007	5,299	7,969	9,841	23,109
October.....	1,226	1,235	18,552	21,013	4,599	8,998	10,985	24,582
November.....	1,131	1,373	23,951	26,455	4,039	9,211	8,152	21,402
December.....	1,153	2,292	26,082	29,527	4,336	8,773	11,303	24,412
Total.....	10,887	22,697	267,540	301,124	59,031	111,338	133,863	304,232
1931								
January.....	739	2,309	23,717	26,765	4,373	9,965	8,435	22,773
February.....	331	2,698	26,180	29,209	5,001	11,384	9,036	25,421
March.....	269	2,442	28,238	30,949	4,545	14,076	14,330	32,951
April.....	518	2,188	17,400	20,106	3,841	11,266	12,151	27,258
May.....	443	2,392	22,061	24,896	2,813	12,899	9,933	25,645
June.....	386	2,943	28,301	31,630	3,067	11,067	9,817	23,951
July.....	203	2,027	24,266	26,496	2,379	9,951	8,666	20,996
August.....	306	2,050	23,135	25,491	1,996	10,288	8,962	21,246
September.....	607	2,183	26,576	29,366	2,632	10,594	10,732	23,958
October.....	809	2,525	25,449	28,783	3,032	10,173	10,699	23,904
November.....	1,709	2,638	28,353	32,700	2,814	10,626	8,995	22,435
December.....	942	2,765	26,973	30,680	3,066	9,466	9,208	21,740
Total.....	7,262	29,160	300,649	337,071	39,559	131,755	120,964	292,278

See note to Table 109.

TABLE 111.—Wood pulp: Receipts of sulphate and of soda pulp by United States paper mills reporting to the Tariff Commission, by sources, for each month, 1929-1931

[Tons of 2,000 pounds]

Year and month	Sulphate, bleached and unbleached				Soda, bleached and unbleached			
	From domestic mills		From foreign mills	Total	From domestic mills		From foreign mills, affiliated and un-affiliated	Total
	Affiliated	Unaffiliated			Affiliated	Unaffiliated		
1929								
January.....	2,410	2,668	18,644	23,731	5,233	3,215	244	8,692
February.....	2,014	2,794	14,837	19,645	5,032	3,410	116	8,558
March.....	2,864	3,673	13,916	20,353	5,352	3,522	863	9,737
April.....	2,314	2,833	15,332	20,479	5,369	3,471	272	9,112
May.....	2,511	2,807	17,962	23,280	6,107	3,693	223	10,023
June.....	4,133	2,318	19,933	26,384	5,385	3,776	773	9,934
July.....	5,496	2,795	20,387	28,678	5,476	3,754	312	9,542
August.....	5,872	2,320	16,651	24,723	6,947	4,009	427	11,383
September.....	4,765	2,388	16,602	23,755	5,984	3,989	880	10,853
October.....	5,833	2,782	16,986	24,601	5,459	3,819	341	9,619
November.....	5,469	2,187	15,234	22,890	5,905	3,382	215	9,502
December.....	3,346	2,196	15,143	20,685	5,560	3,630	896	10,086
Total.....	47,036	31,661	200,507	279,204	67,809	43,670	5,592	117,041
1930								
January.....	4,628	2,329	16,888	23,845	7,139	3,790	134	11,063
February.....	5,854	2,280	12,814	20,948	5,690	2,911	25	8,826
March.....	5,730	2,180	14,421	22,331	5,742	3,245	712	9,699
April.....	4,240	1,600	8,982	14,822	5,987	3,332	203	9,522
May.....	7,149	1,554	7,472	16,175	5,286	3,398	284	8,968
June.....	9,108	957	13,498	23,563	4,987	2,976	618	8,581
July.....	2,067	604	10,966	13,627	5,429	2,717	200	8,346
August.....	2,230	385	18,065	20,680	4,372	2,602	110	7,084
September.....	1,930	382	15,342	17,654	5,139	2,298	323	7,760
October.....	2,635	707	16,520	19,862	5,079	2,800	330	8,209
November.....	1,328	339	16,445	18,112	4,449	2,496	93	7,038
December.....	1,670	332	17,766	19,768	5,507	2,082	987	8,578
Total.....	48,509	13,649	169,109	231,327	65,006	34,647	4,019	103,672
1931								
January.....	1,273	787	14,934	16,994	5,019	2,571	82	7,672
February.....	1,509	671	16,480	18,660	4,634	2,111	259	7,004
March.....	1,913	638	18,137	20,688	5,085	2,422	572	8,079
April.....	2,229	541	17,068	19,838	5,206	2,149	230	7,585
May.....	1,716	715	17,075	19,506	5,319	2,107	229	7,655
June.....	1,776	692	23,822	26,290	5,204	1,848	792	7,844
July.....	1,655	121	24,763	26,539	4,974	1,640	238	6,852
August.....	2,192	20	18,040	20,252	4,759	1,470	37	6,316
September.....	2,072	88	17,076	19,236	4,766	1,791	834	7,391
October.....	1,512	146	15,398	17,056	5,110	1,356	142	6,608
November.....	1,552	70	23,919	25,541	4,531	1,202	81	5,814
December.....	1,175	20	19,918	21,113	5,483	859	624	6,966
Total.....	20,574	4,509	226,030	251,713	60,090	21,526	4,170	85,786

See note to Table 109.

TABLE 112.—Wood pulp: Receipts of ground wood by United States paper mills reporting to the Tariff Commission, by sources, for each month, 1929-1931

[Tons of 2,000 pounds]

Year and month	Mechanical, bleached and unbleached			Total
	From domestic mills		From foreign mills, affiliated and unaffiliated	
	Affiliated	Unaffiliated		
1929				
January.....	5, 125	173	6, 529	11, 832
February.....	4, 526	274	5, 033	9, 893
March.....	4, 912	251	7, 629	12, 792
April.....	4, 366	140	5, 809	10, 315
May.....	4, 258	194	9, 905	14, 357
June.....	3, 613	145	6, 385	12, 143
July.....	3, 171	97	6, 189	9, 457
August.....	3, 562	225	6, 036	9, 823
September.....	3, 536	344	6, 858	10, 738
October.....	3, 961	189	4, 819	8, 969
November.....	2, 974	423	6, 862	10, 259
December.....	3, 206	562	9, 781	13, 549
Total.....	47, 210	3, 022	81, 895	132, 127
1930				
January.....	3, 105	361	7, 445	10, 911
February.....	2, 842	322	5, 081	8, 245
March.....	2, 942	359	7, 859	11, 160
April.....	2, 822	321	5, 834	8, 977
May.....	2, 624	166	6, 896	9, 686
June.....	2, 876	309	8, 210	11, 395
July.....	2, 572	306	4, 897	7, 775
August.....	1, 784	468	6, 476	8, 728
September.....	2, 090	266	7, 713	10, 069
October.....	2, 172	460	9, 884	12, 516
November.....	2, 314	187	5, 535	8, 036
December.....	2, 783	153	12, 486	15, 422
Total.....	30, 926	3, 678	88, 316	122, 920
1931				
January.....	3, 034	330	3, 393	6, 757
February.....	3, 137	266	3, 098	6, 501
March.....	3, 289	184	6, 600	10, 073
April.....	4, 059	321	4, 395	8, 775
May.....	3, 630	212	1, 904	5, 746
June.....	3, 270	244	5, 005	8, 519
July.....	3, 099	182	2, 464	5, 745
August.....	3, 135	375	1, 834	5, 344
September.....	3, 189	235	6, 311	9, 735
October.....	3, 113	153	4, 844	8, 110
November.....	3, 244	433	6, 352	10, 029
December.....	3, 064	243	6, 431	9, 738
Total.....	39, 263	3, 178	52, 631	95, 072

See note to Table 104.

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TABLE 113.—*Wood pulp: Contracts for purchase of European pulp, by regions¹ and principal kinds, 1929-1931*

[These contracts are as reported by importers covering about 90 per cent of all European pulp imported]

[Tons of 2,000 pounds]

Period in which contracts were made	Region I	Region II	Region III	Region IV	Total
UNBLEACHED SULPHITE					
1929					
January-March.....	52,827	39,361	7,140	90	99,418
April-June.....	104,667	63,247	7,311	.....	175,225
July-September.....	51,390	26,856	380	28	78,660
October-December.....	17,162	9,292	73	.....	26,527
Total.....	226,046	138,756	14,910	118	379,830
1930					
January-March.....	41,030	28,948	28	202	70,208
April-June.....	58,779	75,044	196	90	134,109
July-September.....	63,912	41,298	954	1,084	107,248
October-December.....	74,502	61,255	1,333	560	137,650
Total.....	238,223	206,545	2,511	1,936	449,215
1931					
January-March.....	86,620	53,850	1,467	1,781	143,718
April-June.....	83,414	30,858	1,592	174	116,038
July-September.....	58,603	97,860	502	366	157,621
October-December.....	132,164	76,012	3,214	213	211,593
Total.....	361,091	258,570	6,775	2,534	628,970
BLEACHED SULPHITE					
1929					
January-March.....	8,807	1,666	3,907	17	14,457
April-June.....	18,077	2,494	1,542	.....	22,113
July-September.....	21,856	4,568	245	.....	26,669
October-December.....	30,216	11,680	837	.....	42,733
Total.....	78,956	20,408	6,591	17	105,972
1930					
January-March.....	32,298	11,545	126	.....	43,969
April-June.....	16,476	7,047	1,663	11	25,197
July-September.....	17,699	6,008	160	.....	23,867
October-December.....	12,121	3,627	198	.....	15,946
Total.....	78,594	28,227	2,147	11	108,979
1931					
January-March.....	24,620	7,122	1,362	.....	33,113
April-June.....	24,273	2,309	1,612	.....	28,194
July-September.....	13,290	3,729	531	.....	17,600
October-December.....	25,065	7,339	1,477	.....	33,881
Total.....	87,257	20,499	5,032	.....	112,788
UNBLEACHED SULPHATE					
1929					
January-March.....	35,623	25,060	4,589	560	65,832
April-June.....	49,123	45,203	2,884	.....	97,210
July-September.....	53,731	16,434	4,452	728	75,348
October-December.....	65,578	29,028	7,656	56	102,318
Total.....	204,055	115,725	19,531	1,344	340,708
1930					
January-March.....	32,132	13,196	6,580	.....	51,908
April-June.....	98,180	101,952	7,355	336	207,524
July-September.....	66,491	57,952	8,267	258	132,968
October-December.....	57,044	42,050	9,603	1,467	110,164
Total.....	253,847	215,150	31,806	2,061	502,864
1931					
January-March.....	29,159	21,758	24,442	952	76,311
April-June.....	140,034	46,780	26,637	.....	213,351
July-September.....	108,913	56,063	30,089	594	195,659
October-December.....	19,024	12,841	5,223	28	37,116
Total.....	297,130	137,442	86,291	1,574	522,437

¹ Region I includes Maine, New Hampshire, Vermont, Massachusetts, New York, Connecticut, Rhode Island, Pennsylvania, and New Jersey; Region II includes Minnesota, Michigan, Wisconsin, Illinois, Indiana, and Ohio; Region III includes Delaware, Maryland, West Virginia, Virginia, North Carolina, and South Carolina; Region IV includes Tennessee, Alabama, Mississippi, Louisiana, and Texas; Region V includes Washington, Oregon, and California.

TABLE 114.—Comparison of contracts for European pulp for delivery to paper mills in Lake States region¹ through Atlantic ports and through Lake ports

Period and kind of pulp	Deliveries through Atlantic ports			Deliveries through Lake ports		
	Quantity	Price per short ton		Quantity	Price per short ton	
		On dock, Atlantic ports	Including freight to paper mills		On dock, Lake ports	Including freight to paper mills
UNBLEACHED SULPHITE						
1929						
January-March.....	Short tons 39,381	\$52.00	\$58.20	Short tons		
April-June.....	62,228	54.60	60.80	1,019	\$58.00	\$60.20
July-September.....	26,856	55.00	61.00			
October-December.....	9,292	61.00	67.20			
Total.....	137,737	53.80	60.00	1,019	58.00	60.20
1930						
January-March.....	28,948	51.80	57.80			
April-June.....	75,044	52.00	58.20			
July-September.....	40,738	48.00	54.40	500	52.00	54.20
October-December.....	60,185	44.80	61.00	1,070	47.80	50.00
Total.....	204,915	49.20	55.40	1,630	49.20	51.40
1931						
January-March.....	51,582	43.00	49.20	2,268	45.40	47.60
April-June.....	30,466	42.00	48.20	392	45.60	47.80
July-September.....	88,129	41.60	47.80	11,721	42.40	44.60
October-December.....	68,608	35.40	41.80	7,604	37.80	40.00
Total.....	238,685	40.40	46.60	21,885	41.00	43.20
BLEACHED SULPHITE						
1929						
January-March.....	1,666	73.00	81.60			
April-June.....	2,102	73.20	79.60	392	74.00	76.20
July-September.....	4,568	80.00	88.20			
October-December.....	11,680	72.60	79.40			
Total.....	20,016	74.40	81.60	392	74.00	76.20
1930						
January-March.....	10,985	63.00	69.20	560	67.60	69.80
April-June.....	7,047	62.40	68.60			
July-September.....	5,728	68.20	74.60	280	62.00	64.20
October-December.....	3,627	59.00	65.20			
Total.....	27,387	63.40	69.80	840	65.80	68.00
1931						
January-March.....	7,066	63.60	70.60	56	56.40	58.60
April-June.....	2,253	61.60	68.20	56	46.00	48.20
July-September.....	3,113	52.80	59.40	616	47.80	50.00
October-December.....	7,171	46.00	53.40	168	45.20	47.40
Total.....	19,603	55.00	62.00	896	47.80	50.00
UNBLEACHED SULPHATE						
1929						
January-March.....	19,852	50.60	57.20	5,208	52.20	53.80
April-June.....	40,051	47.60	53.80	5,152	51.00	52.60
July-September.....	16,434	48.00	54.40			
October-December.....	29,028	48.80	55.80			
Total.....	105,365	48.60	55.20	10,360	51.60	53.20
1930						
January-March.....	13,196	44.40	51.20			
April-June.....	91,312	32.80	39.00	10,640	38.40	40.00
July-September.....	56,608	34.40	40.80	1,344	37.60	39.20
October-December.....	39,278	31.20	38.60	2,772	35.20	36.80
Total.....	200,394	33.80	40.40	14,756	37.60	39.20
1931						
January-March.....	18,650	31.40	38.00	3,108	33.40	35.00
April-June.....	38,240	30.20	36.60	8,540	32.20	33.80
July-September.....	38,731	31.20	37.60	17,332	34.00	35.60
October-December.....	10,601	30.40	37.40	2,240	34.00	35.60
Total.....	106,222	30.80	37.40	31,220	33.60	35.20

¹ Lake States region includes Michigan, Minnesota, and Wisconsin.

TABLE 115.—Wood pulp: Quantity of domestic and imported stock warehoused at principal ports on specified dates

[Tons of 2,000 pounds]

	1929		1930		1931		1932	
	Jan. 1	July 1	Jan. 1	July 1	Jan. 1	July 1	Jan.	Feb. 1
All ports:								
Domestic.....	278	6, 104	10, 763	4, 368	12, 915	8, 267	11, 284	10, 744
Imported.....	40, 165	46, 825	62, 000	71, 409	101, 623	73, 695	100, 604	150, 133
Portland and Boston:								
Domestic.....	38	5, 326	4, 284	1, 122	6, 418	4, 208	6, 696	6, 220
Imported.....	17, 404	22, 444	19, 598	23, 777	42, 331	24, 639	37, 948	55, 620
New York:								
Domestic.....	75	75		91	470	399	132	440
Imported.....	1, 819	1, 978	2, 946	5, 416	7, 810	2, 825	7, 247	10, 862
Philadelphia:								
Domestic.....	165	233	4, 479	2, 298	4, 219	2, 668	1, 997	1, 660
Imported.....	3, 233	3, 643	2, 759	3, 462	6, 060	14, 647	16, 069	19, 169
Baltimore:								
Domestic.....		486	2, 000	857	1, 314	971	1, 979	2, 304
Imported.....	12, 562	14, 676	31, 468	36, 009	41, 080	26, 090	31, 044	52, 239
Norfolk and Newport News:								
Domestic.....					494	21		
Imported.....	5, 147	4, 084	6, 129	2, 388	3, 628	3, 941	7, 966	11, 024
New Orleans:								
Domestic.....							480	120
Imported.....				357	714	1, 553	330	619

TABLE 116.—Intercoastal movement of domestic wood pulp from Pacific coast ports to Atlantic and Gulf ports

[Source: U. S. Shipping Board Bureau of Research (material furnished to the U. S. Tariff Commission)]

[Tons of 2,000 pounds]

	1930		1931			
	Third quarter	Fourth quarter	First quarter	Second quarter	Third quarter	Fourth quarter
Portland.....	521	1, 604	3, 569	6, 783	7, 553	2, 457
Boston and Providence.....	5, 968	9, 561	9, 888	7, 687	10, 315	9, 622
New York and Albany.....	9, 264	9, 463	1, 837	6, 158	5, 246	3, 255
Philadelphia and Wilmington.....	3, 641	6, 757	2, 327	2, 523	5, 709	4, 362
Baltimore.....	4, 393	3, 802	2, 490	1, 696	5, 518	6, 095
Newport News and Norfolk.....	560	1, 206	2, 328	1, 142	2, 584	2, 504
Charleston.....			136		125	422
New Orleans and Mobile.....		124	125	12	3, 302	3, 754
Total.....	24, 347	32, 517	22, 700	25, 901	40, 352	32, 471