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THE INTERNATIONAL WEEKLY OF THE PAPER AND PULP INDUSTRY

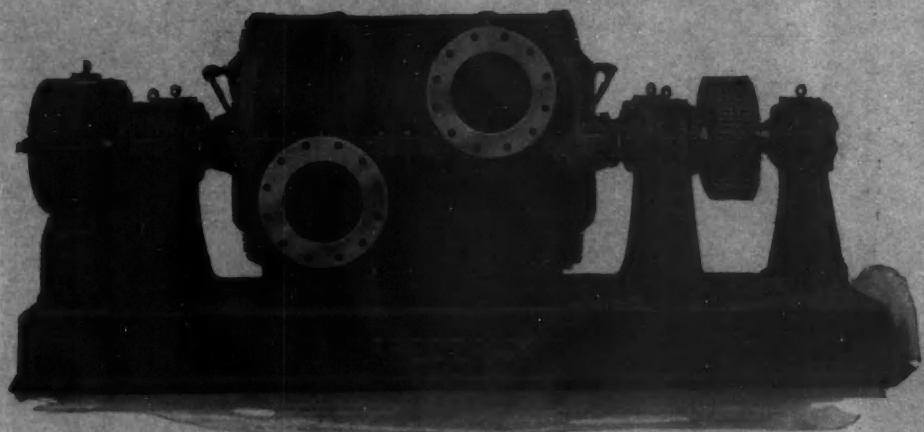
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FIFTY-FIRST YEAR

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PAPER TRADE JOURNAL

ESTABLISHED 1872

THE INTERNATIONAL WEEKLY OF THE PAPER AND PULP INDUSTRY AND THE PIONEER PUBLICATION IN ITS FIELD

FIFTY-FIRST YEAR

Published Every Thursday by the

LOCKWOOD TRADE JOURNAL CO., INC.

LESLIE R. PALMER GEO. S. MACDONALD F. K. HOPPIE
PRESIDENT VICE-PRESIDENT & TREAS. SECRETARY
10 EAST 39TH ST. N. Y. U. S. A.

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ESTABLISHED IN 1872

PAPER TRADE JOURNAL

Vol. LXXVI. No. 24

NEW YORK AND CHICAGO

Thursday, June 14, 1923

PRODUCTION OF ALL PAPERS DURING APRIL

According to Figures Just Issued by the Federal Trade Commission Stocks of Book Paper, Boxboard, Fine Paper, Hangings and Felts Increased During the Month While All Other Grades Decreased—Stocks of All Grades Reported by Manufacturers at the End of the Month Amounted to 233,581 Tons—
Total Mill Stocks at End of Month Equal Eleven Days' Average Output

[FROM OUR REGULAR CORRESPONDENT.]

WASHINGTON, D. C., June 11, 1923.—The attached tabulation is a summary of total production, shipments and stocks of paper mills in the United States, as reported to the Federal Trade Commission, for the month of April, 1923. This issue of the summary does not carry idle machine time, as this part of the statistics has been discontinued. This summary is compared with the month of April, 1918 to 1922, inclusive. Import and export statistics for January 1922 and 1923, as shown by the records of the Department of Commerce, are also included.

Following the tabulation of total production, shipments and stocks for all mills reporting, is a tabulation for identical mills reporting to the Commission for March and April 1921, 1922 and 1923, in News Print, Book, Paperboard, Wrapping, Bag and Fine.

The average total production for each grade is based upon the production for the years 1918 to 1922, inclusive, and the average stocks on hand at the end of the month are for the 60 months of 1918 to 1922, inclusive.

The production has been classified, for convenience, into 12 grades, according to the grades of paper manufactured by the reporting mills. Some mills, making several grades, appear in more than one group, which causes duplication in the item "number of mills."

For each grade in the number of mills includes all mills commonly operating on that grade, regardless of whether they produced any tonnage of that particular grade during the month. In other words, it includes all mills reporting either production or merely stocks or shipments of that grade.

The stocks of paper carried by different mills depend not only upon the condition of the market but also upon the kind of paper made, trade, customs, etc.

Total Tonnage Summary

Total reported production, shipments and stocks of paper, by grades, for the month of April, 1923, compared with April 1922, 1921, 1920, 1919 and 1918, together with average production and stocks.

Grade	Number of mills	Stocks on hand first of month Net tons	Production Net tons	Shipments Net tons	Stocks on hand end of month Net tons
News Print (Standard and Special Grades of News):					
April, 1923	71	20,180	116,719	118,023	18,876
April, 1922	79	28,180	111,861	115,167	24,874
April, 1921	88	41,789	115,408	122,091	35,106
April, 1920	89	27,564	128,269	134,160	21,673
April, 1919	70	31,932	116,278	111,825	36,385
April, 1918	66	26,984	111,480	113,600	24,864
Average	..	..	111,450	..	24,813
Standard News (Included in News Print):					
April, 1923	57	15,479	107,023	107,959	14,543
April, 1922	65	23,298	105,079	108,276	20,101
April, 1921	67	35,517	105,855	111,792	29,580
April, 1920	75	25,104	118,917	124,936	19,085
April, 1919	51	24,869	107,445	101,078	31,236
April, 1918	50	20,699	101,497	103,305	18,891
Average	..	..	101,400	..	20,368

Grade (M. F., S. S. C. and Coated):	Number of mills	Stocks on hand first of month Net tons	Production Net tons	Shipments Net tons	Stocks on hand end of month Net tons
April, 1923	85	35,283	93,390	91,802	36,871
April, 1922	91	38,367	70,507	71,507	37,367
April, 1921	92	37,721	51,380	50,846	38,255
April, 1920	95	24,496	95,251	92,746	27,001
April, 1919	88	32,823	67,628	65,306	35,145
April, 1918	90	27,654	76,702	75,505	28,851
Average	..	..	74,775	..	31,889

Paperboard—Total (Straw, Fiber, Leather, Chip, Box, Etc.):	Number of mills	Stocks on hand first of month Net tons	Production Net tons	Shipments Net tons	Stocks on hand end of month Net tons
April, 1923	193	52,524	179,744	179,968	52,300
April, 1922	229	71,986	164,327	166,557	69,756
April, 1921	236	67,394	128,186	124,800	70,780
April, 1920	242	39,441	199,395	191,898	46,938
April, 1919	234	60,387	138,802	136,927	62,262
April, 1918	227	35,312	162,836	159,754	38,394
Average	..	..	163,550	..	52,102

Boxboard (Included in Paperboard):	Number of mills	Stocks on hand first of month Net tons	Production Net tons	Shipments Net tons	Stocks on hand end of month Net tons
April, 1923	114	21,928	131,480	131,257	22,151
April, 1922	136	33,563	121,398	122,238	32,723
April, 1921	135	32,305	90,637	87,709	35,233
April, 1920	141	17,852	148,063	144,360	21,555
Average	..	..	66,525	..	27,078

Wrapping (Kraft, Manila, Fiber, Etc.):	Number of mills	Stocks on hand first of month Net tons	Production Net tons	Shipments Net tons	Stocks on hand end of month Net tons
April, 1923	135	44,124	78,559	79,280	43,403
April, 1922	150	64,951	61,562	58,092	68,401
April, 1921	144	57,536	51,713	50,627	58,622
April, 1920	150	30,391	75,347	74,602	31,036
April, 1919	159	71,238	48,158	43,414	75,982
April, 1918	133	35,343	61,859	57,148	40,054
Average	..	..	60,925	..	47,015

Bag (All Kinds):	Number of mills	Stocks on hand first of month Net tons	Production Net tons	Shipments Net tons	Stocks on hand end of month Net tons
April, 1923	38	2,630	12,165	12,387	2,408
April, 1922	46	3,714	17,194	17,507	3,401
April, 1921	39	3,792	7,954	8,314	3,432
April, 1920	43	2,829	19,745	18,979	3,595
April, 1919	40	5,309	9,435	9,192	5,552
April, 1918	24	2,883	14,197	15,065	2,015
Average	..	..	14,825	..	3,417

Fine (Writing, Bonds, Ledgers, Etc.):	Number of mills	Stocks on hand first of month Net tons	Production Net tons	Shipments Net tons	Stocks on hand end of month Net tons
April, 1923	93	36,295	32,507	30,913	37,889
April, 1922	103	35,123	27,420	26,737	35,806
April, 1921	107	39,355	15,631	14,903	40,083
April, 1920	116	30,211	33,493	31,486	32,218
April, 1919	112	37,819	22,470	22,050	38,239
April, 1918	88	23,527	27,823	16,689	34,661
Average	..	..	27,850	..	33,880

Tissue (Toilet, Crepe, Fruit Wrappers, Etc.):	Number of mills	Stocks on hand first of month Net tons	Production Net tons	Shipments Net tons	Stocks on hand end of month Net tons
April, 1923	72	7,898	14,618	15,229	7,287
April, 1922	97	8,634	15,486	15,591	8,529
April, 1921	93	8,725	9,686	10,665	7,746
April, 1920	101	5,997	16,572	15,730	6,839
April, 1919	89	8,141	10,900	9,673	9,368
April, 1918	72	4,400	11,830	10,235	5,995
Average	..	..	13,425	..	7,083

Hanging (No. 2 Blank, Oatmeal, Tile, Etc.):					
April, 1923	21	2,628	8,952	8,353	3,227
April, 1922	25	5,321	6,809	6,807	5,323
April, 1921	20	9,314	3,862	3,089	10,087
April, 1920	23	1,281	8,550	8,660	1,171
April, 1919	20	3,219	7,326	6,465	4,080
April, 1918	15	4,925	4,358	3,459	5,824
Average			7,050		4,823
Felts and Building (Roofing, Sheathing, Etc.):					
April, 1923	46	7,287	41,545	41,251	7,581
April, 1922	47	12,337	28,986	29,739	11,584
April, 1921	51	11,629	22,131	24,091	9,669
April, 1920	54	7,604	33,587	31,220	9,971
April, 1919	45	7,828	17,844	17,934	7,738
April, 1918	34	7,902	26,407	29,728	4,581
Average			26,800		8,983
Miscellaneous Grades (Specialties Not Otherwise Classified):					
April, 1923	97	21,341	27,291	28,293	20,339
April, 1922	107	20,930	24,309	25,418	19,821
April, 1921	95	20,082	16,061	16,158	19,985
April, 1920	86	15,030	24,193	23,432	15,791
April, 1919	64	13,169	13,048	12,974	13,243
April, 1918	61	8,395	22,648	24,515	6,528
Average			21,375		15,663
Total—All Grades:					
April, 1923		230,190	605,490	605,499	230,181
April, 1922		289,523	528,461	538,122	284,862
April, 1921		297,337	422,012	425,584	293,765
April, 1920		184,744	634,402	622,913	196,233
April, 1919		271,865	451,889	435,760	287,994
April, 1918		177,625	520,140	505,698	191,767
Average			522,025		230,217

The following stocks were reported on hand at terminal and delivery points on April 30 in addition to the mill stocks shown in the tabulation: Book paper, 3,070 tons; paperboard, 100 tons; wrapping, five tons; fine, 16 tons; and miscellaneous grades, 209 tons; total 3,400 tons.

Stocks of book, boxboard, fine, hanging and felts increased during the month. All other grades decreased.

Stocks of all grades reported by manufacturers at the end of April amounted to 233,581 tons, including the stocks at terminal and delivery points. In addition to these stocks, jobbers and publishers reported news print stocks and tonnage in transit aggregating 223,455.

Ratio of Stocks to Average Production

Comparing the stocks on hand at the domestic mills on April 30, with their average daily production, based upon the combined production for 1918 to 1922, inclusive, the figures show that:

- News print paper mill stocks equal 4 days' average output.
- Book paper mill stocks equal 12 days' average output.
- Paper board mill stocks equal 8 days' average output.
- Wrapping paper mill stocks equal 18 days' average output.
- Bag paper mill stocks equal 4 days' average output.
- Fine paper mill stocks equal 34 days' average output.
- Tissue paper mill stocks equal 14 days' average output.
- Hanging paper mill stocks equal 11 days' average output.
- Felts and building paper mill stocks equal 7 days' average output.
- Miscellaneous paper mill stocks equal 24 days' average output.
- Total paper mill stocks of all grades equal 11 days' average output.

Imports and Exports

The imports and exports for all grades of paper for January, 1923, compared with January, 1922, as shown by the records of the Department of Commerce, were as follows:

Item	January, 1923		January, 1922	
	Pounds	Value	Pounds	Value
Imports:				
News print	213,976,504	\$7,805,696	164,964,408	\$5,941,351
Book paper	1,214,607	63,524	43,549	4,606
Paperboard	6,851,740	189,809	3,093,323	88,924
Wrapping paper	8,693,330	413,221	2,278,808	81,355
Fine	110,739	23,307	141,968	18,144
Hanging paper	1,463,126	70,819		37,057
Tissue	163,191	72,232		
All other grades (a)		269,718		166,133

Exports:				
News print	2,127,139	\$119,569	5,068,732	\$215,508
Book paper	2,070,706	227,378	1,875,034	205,363
Paperboard	3,311,598	166,857	3,333,431	149,796
Wrapping paper	2,540,553	188,002	2,117,698	148,745
Bag	639,041	58,445	1,063,338	105,136
Fine	717,481	104,225	705,436	122,046
Tissue	1,003,384	85,331	439,939	75,234
Hanging		47,465		38,306
All other grades (a)	4,051,243	373,090	1,850,246	278,545
Total imports		\$8,908,326		\$6,337,570
Total exports		1,370,362		1,339,179

(a) Includes some paper already converted into commercial articles.

News print is the only grade of which the United States is a heavy importer.

The bulk of this tonnage is imported from Canada.

The value of the exports of news print for January, 1923, was about 2 per cent of the imports.

The value of the total imports of all grades was about 11 per cent more than for December.

The value of the total exports for January, 1923, was less than the imports by \$7,537,964, and was \$31,183, more than the exports for January, 1922.

As to value, the principal grades exported during January, 1923, were book, wrapping, paperboard, news print and fine.

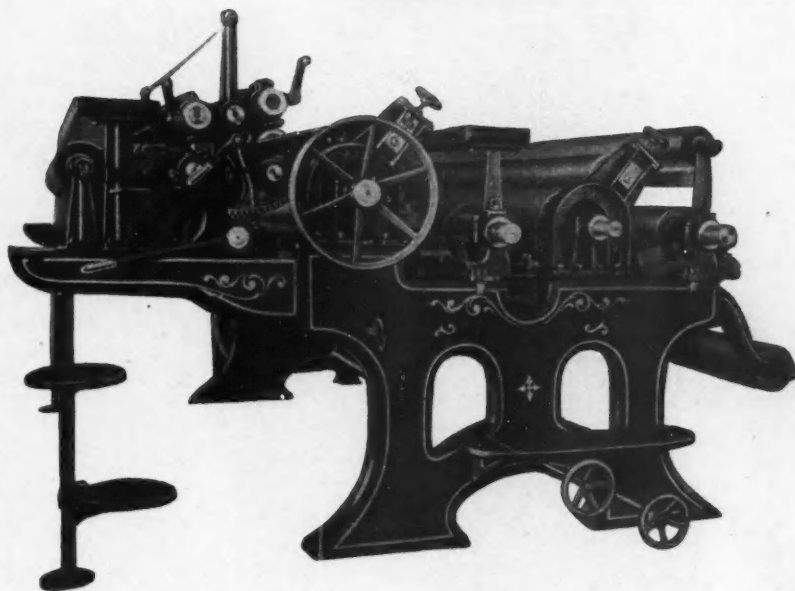
Tonnage of Identical Mills

The following tabulation is a summary of production, shipments, and stocks of news print, book, paperboard, wrapping and fine, for identical mills, for the months of March and April, 1921, 1922 and 1923:

Grade	(Net tons, 2,000 lbs.)				
	Number of identical mills	Stock first of month	Production	Shipments	Stock end of month
News Print:					
March, 1923	70	22,966	127,887	130,742	20,111
April, 1923	70	20,111	115,465	116,782	18,794
March, 1922	70	27,566	118,503	117,682	28,387
April, 1922	70	28,387	113,055	116,349	25,093
March, 1921	70	37,375	106,157	103,137	40,395
April, 1921	70	40,395	114,142	120,903	33,600
Book:					
March, 1923	73	32,324	93,410	95,468	30,266
April, 1923	73	30,266	85,425	83,852	31,839
March, 1922	73	36,199	72,620	73,586	35,233
April, 1922	73	35,233	65,402	66,696	33,939
March, 1921	73	29,183	54,717	50,244	33,656
April, 1921	73	33,656	46,121	45,556	34,221
Paperboard:					
March, 1923	142	42,682	168,695	170,400	40,977
April, 1923	142	40,977	157,300	158,794	39,483
March, 1922	142	47,059	146,466	143,789	48,736
April, 1922	142	48,736	131,471	133,617	46,690
March, 1921	142	42,289	107,340	122,402	47,227
April, 1921	142	47,227	96,950	93,548	50,629
Wrapping:					
March, 1923	89	40,325	74,498	76,603	38,220
April, 1923	89	38,220	68,944	69,264	37,900
March, 1922	89	50,845	58,392	47,325	54,712
April, 1922	89	54,712	50,672	46,886	58,498
March, 1921	89	46,034	42,834	37,306	51,562
April, 1921	89	51,562	44,238	42,951	52,849
Fine:					
March, 1923	72	34,624	32,227	33,965	32,886
April, 1923	72	32,886	31,264	29,452	34,698
March, 1922	72	29,908	25,846	26,075	29,679
April, 1922	72	29,679	24,787	23,895	30,571
March, 1921	72	32,104	16,764	15,106	33,762
April, 1921	72	33,762	13,623	12,882	34,503

Riverside Paper Co. to Erect New Mill Soon

APPLETON, Wis., June 11, 1923.—While no definite announcement has been made by the Riverside Fibre and Paper Company of its plans for erecting a new papermill in Appleton, it is understood that arrangements are progressing satisfactorily and that work on the new project may be started before many months. The company recently negotiated with the city of Appleton for the right to occupy part of a street which passes by the site for the proposed mill and the right was granted on condition of a grant of a tract of equal size on the other side of the street. It had been planned to build this mill several months ago, but the plans were changed for various reasons.



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SUMMER QUIET PREVAILS IN PHILADELPHIA MARKET

Paper Men, However, Express no Concern as Business Generally Is Quieter Than It Has Been—Fine Paper Division of the Philadelphia Paper Trade Association Discusses Matter of Small Deliveries—Paper Stock Market Continues Decidedly Quiet But Dealers Hope for Improvement Soon—Trades Allied With the Graphic Arts Hold Well Attended Meeting to Bring About Co-operation.

[BY OUR REGULAR CORRESPONDENT.]

PHILADELPHIA, Pa., June 12, 1923.—Almost coincident with a rise of the temperature during the week to July and August heights, there came a melting down of orders till they declined to midsummer low levels. There seemed to be no specific cause for a decline in buying and there certainly was not evidenced by the week developments, any cause for complaint or grounds for pessimism. It is felt that the quietness, reflecting general commercial conditions, is but one of those lulls which periodically occur and which seems to be general at this time in all lines of business. The decline in business brought with it no actual weakening of prices save in grey wraps the market for which has for the present at least almost collapsed. It is true that much was heard of mill offerings of the cheaper grades of krafts at prices much below those maintaining for the No. 2 quality, but investigations show that while there is on the market almost a flood of papers called krafts a majority of them are regarded by the distributors as not krafts at all and really only colored manilas.

The printing trade in the city is exceedingly quiet, but paradoxically its orders are all of the rush variety, for, with no active business on hand, the printer only places his paper order when his forms are all made up and the presses are ready to start, and then, of course, he expects the paper man to send the paper immediately. This problem of making immediate deliveries, particularly on small orders, is one that is becoming quite acute in the trade and was given consideration at the recent meeting of the Fine Paper Division of the Philadelphia Paper Trade Association in the Bourse. It was at that session that George W. Ward made the leading address on the subject, outlining a suggestion for a program of collective deliveries. Mr. Ward referred to the fact that loss frequently was occasioned to the distributors when they were called upon, as frequently is the case, to make a rush delivery of a small order to an outlying section of the city. He said that if arrangements could be made for the delivery by the paper houses of this class of orders to a central point, a joint service for all the distributors could be developed, at a saving to them and prompt service to the printer, who might thus be able at single delivery to secure various small parcels of papers ordered perhaps from several houses. Mr. Ward further said that for some time he had been following this plan with success and he offered his associates opportunity to participate. Thus far few, if any, of his competitors have taken advantage of the offer, and since it was made the Ward delivery service has been taken over through purchase of trucks and wagons by Daniel Curry. He is regarded as particularly well versed in paper matters, being a brother of Thomas F. Curry, a member of the Ward sales organization. Some of the distributors inclined to the view that a joint delivery arrangement would only be possible if the teamster in charge preserved absolute confidence regarding the transactions, of which, through his delivery service, he in a sense is a participant. They furthermore suggest that they now have opportunity to use one of several local express services, which make systematic trips to the outlying sections and they believe better results can be secured

through this competitive service than if anyone engaged in this business were given a monopoly of the paper trade.

Stock Men in a Waiting Attitude

In the paper stock trade there still ruled the quietness of the past fortnight or more, but the packers believe the end is in sight. Rightly or wrongly, they incline to the view that mill men are withholding orders in the hopes of bringing down prices and that the issue is whether mill men or stock dealers can longest hold out. The dealers assert that there is so small a quantity of paper stock coming into their warehouses that they readily can continue to store it away until the end of the month and they do not believe that the mills have on hand a sufficient quantity of stock to enable them to continue at their present rate of production, without replenishing it, and that when they are forced into the market in a short time, prices will stiffen and advance. The stock dealers are, therefore, anxiously inquiring of the distributors what information they have regarding mill conditions. The distributors report that, while mill representatives say their firms are booked up ahead, nevertheless, deliveries from the mill now are being made in from two to three weeks, whereas a month ago eight and ten weeks were required.

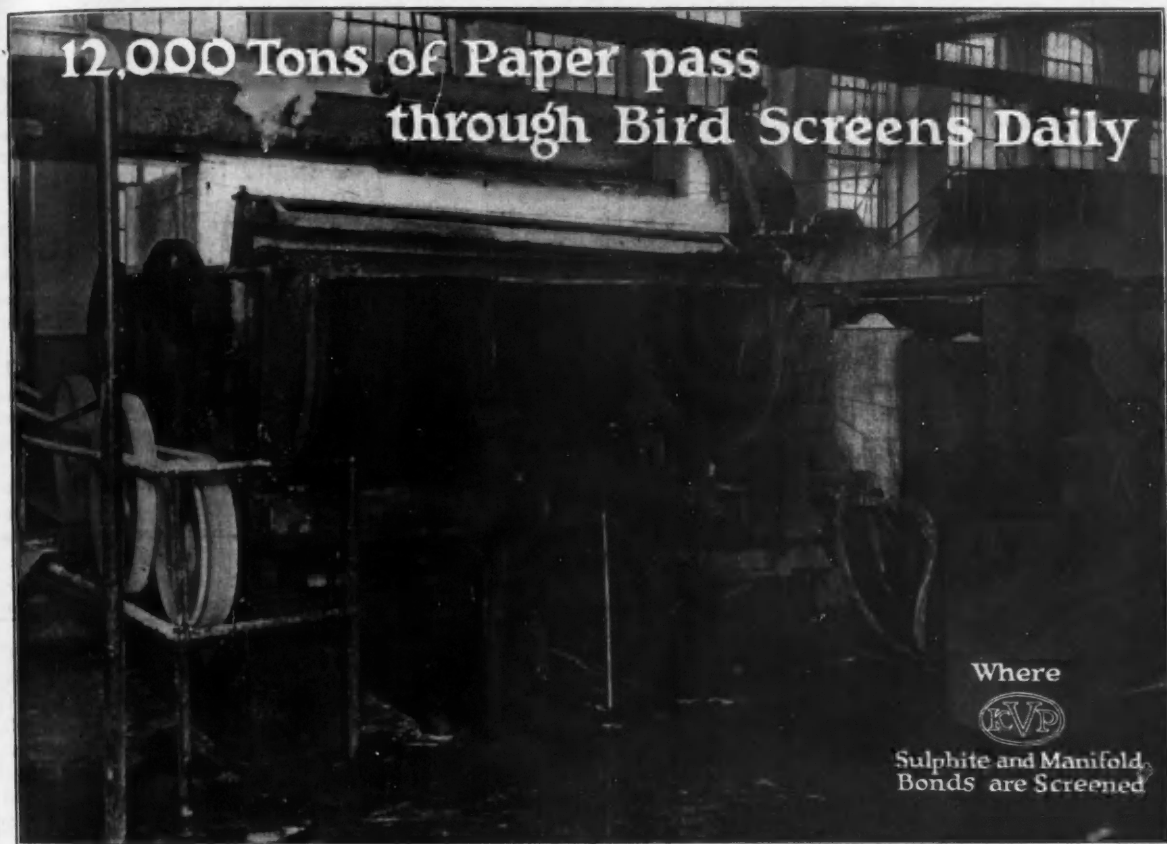
Gathering Waste Paper

The particular matter of interest to the stock men this week was what action the Typothetae of Philadelphia would take on the matter of the contract for the collective gathering of waste from the shops of those members who belong to the Waste Paper Division. The existing contract is with the E. D. Hemingway Company, and it expired on June 6. At the offices of the Typothetae it was said that award of the contract for the year from June 6 was being held in abeyance pending final decision with regard to proposed modifications of its terms. It is understood that some of the largest producers of paper stock in the printing industry, all of them centrally located, believe that they should receive a higher price for their waste because of its larger volume, better grading and facility of collection than is being received by the smaller printers or those in outlying sections where a long haul is required, and, therefore, under the terms of a uniform price for stock made in the contract entered into a year ago, they actually were paying part of the cost of the service to the smaller printers at distant points. A year ago nearly all of the paper distributors holding membership in the Paper Trade Division of the Typothetae, took out membership in the Waste Paper Division, but since then nearly all have withdrawn, taking advantage of their right to do so upon giving a month's notice of intention. Typothetae officials admit the justice of the arguments made by the larger producers of paper stock and are hopeful of meeting them by modification of terms to be included in the new specifications for the competitive bidding for the collective purchase of the waste paper of all the members of the Waste Paper Division.

Allied Trades in Epochal Meeting

The development, however, of overwhelming importance of the week to all engaged in the fine paper business was a meeting, without precedent in trade annals, held in the Adelphia Hotel on June 5, of representatives of all the trades allied with the Graphic Arts. In the gathering of 53 persons which assembled, the paper trade was in a majority. The purpose of the meeting was to bring about closer co-operation between all the interests supplying the printer with his raw materials, and the master printers themselves in the matter of credits and the exchange of credit information. The movement was inaugurated on the part of the Typothetae, by William Sharpless, chairman of the Trades Relations Committee, which just a year ago and to the very day of last week's meeting effected a trades custom program between the master printers and the paper distributors. The essence of that program was that the

(Continued on page 32)



12,000 Tons of Paper pass
through Bird Screens Daily

Where



Sulphite and Manifold
Bonds are Screened

"The Bird Screens we have, have been in service five years, and the best recommendation we can give them is that we are installing them in our new Model Paper Mill in all places where we must screen paper stock."

KALAMAZOO VEGETABLE PARCHMENT PAPER CO.

The Kalamazoo Vegetable Parchment Paper Company's
Bird Screen installation includes:

2 Screens supplying a 165 inch machine with 60,000 lbs.
daily.

2 Screens supplying a 116 inch machine with 35,000 lbs.
daily.

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Western Representative,
T. H. Savery, Jr., 1718 Republic Bldg.
Chicago, Ill. *Canadian Builders of Bird Machinery*
Canadian Ingersoll-Rand Co., Ltd.
260 St. James Street
Montreal, Canada

5239

BIRD SCREENS

SUMMER QUIET PREVAILS IN PHILADELPHIA

(Continued from page 30)

paper distributors, as wholesalers of paper, should not sell printing papers to the consumer, but should restrict their sales to the converters. The master printers, who previously had been insistent on the "long price list," desisted from further agitation. Such happy relations, however, have resulted from this agreement that the Typotheta is now desirous that all the allied trades enter into an organization for the improvement of credits and the raising of the planes of both the printing industry and that of all the allied trades. The Typotheta's position is that by the too free granting of credits and the failure to exchange credit information there are in the printing industries many who offer unfair competition to the legitimate printers, and that an organization of the kind proposed would be conducive to the making of better business men of the printers as a whole and at the same time would save the paper men, the ink dealers, and all others interested from the losses which they now sustain through unwise credits and failure to exchange credit information. The fine paper distributors, as chief parties at interest, entered most heartily into the spirit of a meeting characterized by one so well qualified to express judgment as Leon Beck, of the Beck Paper Company, as "the most remarkable gathering I have ever attended, because there convened at one time a larger and more representative number of paper distributors, ink makers, press makers, type makers and others included in the graphic arts group than I believe ever got together in the history of the city. I believe splendid results will follow this meeting."

At the gathering addresses were made by William Sharpless, who particularly emphasized the point that there were many cases worthy of the granting of extended credit by the paper distributors and that there was no thought of acting against the little man, but that through a united association it was possible to make of bad debtors, good ones, and by the newly appointed field secretary of the Typotheta, George F. Weaver, who pointed out that the Typotheta now had credit information regarding more than 10,000 buyers of printing and that it was desirous of extending its services to cover as completely as possible all those who supplied the printer with his raw materials. No action was taken at this meeting, which was wholly informative, but a further meeting for definite action is being arranged.

Paper Men Who Participated

Representing the paper distributors, there were in attendance the following: T. J. Hare and George W. Hasson, Atlantic Paper Company; Leon Beck and F. Meinecke, Charles Beck Company; I. F. Megargee, Curtis & Bro., Inc.; John A. Datz, A. S. Datz & Son; W. V. Doacher, Louis Dejonge & Co.; D. W. Bond, Dill & Collins Company; H. Satterthwaite and Gilbert Spare, Garrett-Buchanan Company; Edw. R. Grossman, Edw. R. Grossman; A. Richard Hartung and J. V. Smith, A. Hartung & Co.; Warwick C. Miller, Japan Paper Company; E. Latimer, Jr., E. Latimer, Jr.; J. Horace Lindsay, Lindsay Bros., Inc.; Harry J. Donahue, Molten Paper Company; Raymond J. Considine and F. C. Sheehan, Paper House of Pennsylvania; H. S. Zahn, Paper Trade Association; N. C. Chadwick and James McNutt, Raymond & McNutt Company; W. Tredmore, Riegel & Co., Inc.; C. Sharpless Jones, Whiting-Patterson Company, Inc.; W. Luff, D. L. Ward Company.

Notes of Trade Interest

Condolence is being extended to C. Sharpless Jones, Jr., treasurer of the Whiting-Patterson Company, on the death recently of his mother, Mrs. C. Sharpless Jones. She resided in the Delmar Apartments, Germantown, and on the occasion of a fire there last March sustained a double fracture of the ankle, since when she had been under treatment at a hospital.

The three score years and ten and then some which Uncle Daniel Bishop, now at the information desk in the office of the D. L. Ward Company, carries, sit so lightly on his shoulders that he was able to march in parade and participate in other activities as Oriental Guide in the Shriners' convention at Washington during the week.

President Allen E. Whiting, of the Whiting-Patterson Company, expects to sail for Europe on June 30. Mrs. Whiting and their son a short time ago went abroad and he will join them. Otto W. Renner, of the mill order department, returned during the week from a trip to Eastern mills. He will commute to Ocean City for the summer.

Dietrich Conradi, of the fine paper department of the D. L. Ward Company, during the week took possession of his own bungalow home with large surrounding plot on Knights avenue, Collingswood, N. J., and thereby attained a goal which he set for himself at the time he entered the Ward employ.

The Keystone Company, the new paper house whose organization by Frederick S. Balch, lately with E. Latimer, Jr., 126 North Fourth street, recently was announced, has taken a lease on part of the property 321 Cherry street, lately occupied by S. Walter, Inc., and during the week will open there its office and warehouse. A considerable stock of fine papers is to be carried. The firm proposes to specialize in quantity business.

Word was received during the week at the Paper House of Pennsylvania that its president, Norbert A. Considine, who recently sailed for abroad, has left London and was on his way to the mills in Finland and Sweden and that he proposed, if possible, attending the International Printing Trade Convention in Gothenburg.

Employees of the Philadelphia branch of the Whiting Paper Company organized a baseball team and will play its first match with the Main Engraving Company this week.

News of the Wisconsin Industry

[FROM OUR REGULAR CORRESPONDENT.]

APPLETON, Wis., June 11, 1923.—The Kimberly-Clark Company has started work on the community clubhouse for its employees in the village of Kimberly. The contract, which involves approximately \$30,000 has been awarded to the Wisconsin Engineering and Construction Company.

Announcement of the plan to build the clubhouse was made several weeks ago after community houses all over the country had been studied. It is planned to build only the first unit this year and extensive additions will be left to the future.

The Consolidated Water Power and Paper Company has installed a Sturdevant Cinder Collector at its Wisconsin Rapids plant and reports it is satisfactory in operation. The installation was made to remove the soot which poured from the company's stacks, causing considerable complaint.

Considerable new equipment has been installed recently in the plant of the Federal Rubber Co., at Cudahy, Wis., especially in the departments that are devoted to manufacturing supplies required by papermills. It is said the installations were made to facilitate handling papermill supplies.

The Combined Locks Paper Company has sold its office building in the city of Appleton. Some months ago the company purchased a tract of land in the city and it is probable that a new office building will be erected on this property in the near future.

Paper manufacturers are reporting a slight falling off in the demand for paper in the last few days. This, however, is regarded as the usual summer slump. Business has been excellent with most of the mills right up to the last few days.



How

To Speed Up Your Paper Machine—

Without Pitching the Wire

It is now possible to feed stock directly to the wire of a fourdrinier paper machine at any speed desired, without resorting to the expensive process of pitching the wire.

The device that performs this important function also eliminates slices, prevents the wear caused by slices, and makes possible accurate and fine adjustments assuring a sheet of uniform thickness.

The new device is the Voith High Pressure Stock Inlet. We have for you an interesting pamphlet, fully illustrated, describing it in detail. Write for your copy today.

VALLEY IRON WORKS CO.

Plant
APPLETON, WIS.

New York Office
350 MADISON AVE.

TORONTO PAPER DEMAND SHOWING IMPROVEMENT

Buying for June Thus Far Has Been More Active Than for Some Time Past—While the Outlook Generally Is Better Buyers Usually Are Not Willing to Provide for More Than Their Immediate Needs—Abitibi Power & Paper Co. Makes Good Progress in Extension to Its Wood Room—Proposal to Place Embargo on Pulpwood Not Being Well Received—General News of the Trade.

[FROM OUR REGULAR CORRESPONDENT.]

TORONTO, Ontario, June 11, 1923.—Business in the paper line has been very good during the past few days and the outlook is brighter for June than it was for May. Printing establishments report a decided increase in orders and many catalogues and other printed matter are being turned out, which have consumed a good deal of stock. Consumers cannot be induced, however, to purchase much ahead of actual requirements. Prices are now stabilized and conditions down to a good, fundamental basis generally.

There is a fair business in the rag and waste paper line, although cotton rags took a drop during the past few days. There has also been a reduction of a few cents in mixed papers and white news blanks. The pulp market is fair and a conservative amount of buying is going on. Water conditions are good and all the grinders are at work.

The strong feature of the market is news print. The present figure of \$75 per ton will continue throughout the balance of the year. This quotation is regarded as a fair one. Practically the whole of the Canadian output is under contract and there is very little spot offering, which the reserve stocks are not heavy.

Good Progress on Wood Room Extension

An extension of 100 x 90 feet is being built to the wood room of the Abitibi Power and Paper Company at Iroquois Falls, Ont. The addition is two stories high and on the lower floor are the chip screens and bark presses, while on the first floor up are the barkers, chippers, splitter and slasher. In the old wood room will be installed eight drum barkers, four of them being additional equipment. These will give ample barking capacity even when all dry wood is being handled. There are two water tanks. Frozen pulpwood goes first into a tank of warm water, about 160 degrees, before it travels to the drums. After leaving the drums it goes into another tank on the lower floor. One feature of the construction is that the moving of the equipment is planned without interfering in the slightest degree with the output of the mill. W. B. Crombie, construction engineer, has charge of the work, and Russell Bridge, who was superintendent of construction of the new mill, is the contractor.

Making Ready for Pulpwood Operations

W. F. V. Atkinson, of Toronto, who has charge of construction and woods engineering work for the St. Regis Paper Company of Canada, spent the past few days in Toronto. He states that the company intends to construct at Godbout, Que., on the north shore of the St. Lawrence, an extensive plant for the preparation of pulpwood. The wood will come down the Godbout river and will then be conveyed in chutes about one and one-half miles overland to the plant. A large wharf is being built at the harbor for the purpose of loading the wood into boats. The robbing plant will have a capacity of forty or fifty thousand cords per annum. Most of the wood will be secured from the settlers and farmers.

Object to Proposed Wood Embargo

The proposal that the Federal Government impose an embargo on the export of pulpwood cut from private lands in the Dominion

is not being well received in Northern Ontario, where many private companies and contractors operate. Of course, it is not likely that any step toward the prohibition of pulpwood export from private holdings will be taken until the result of the investigation of the commission proposed by the Federal authorities is completed—and perhaps not then—but dealers are quite free in the expression of opinion that, should such a measure be passed, it would retard settlement of New Ontario, as Canadian companies would be able to force down the price of pulpwood, because they would have full control of the market. American demand would be shut off and settlers would have to accept the figure offered by Canadian purchasers. The pulpwood cut on his land is what the settler depends upon to finance him during the first few years in which he is making a clearing preparatory to raising a grain crop. Premier Drury has declared against such a proposed move.

Timber Arrears are Paid Up

The timber and pulpwood investigation, which was conducted by a provincial commission appointed by the Ontario government a couple of years ago, is the subject of much discussion during the present provincial elections in Ontario. In addition to the large sum received for back dues from the Shevlin-Clarke Company, of Fort Frances, Ont., it was stated by a member of the provincial Cabinet lately that, from other companies involved, no less than \$122,000 had been paid into the Ontario treasury. The firms and amounts were: Marshay Lumber Company, Sudbury, \$37,759; Russell Timber Company, Port Arthur, \$55,000; S. L. Lambert, Welland, \$4,218; George E. Farlinger, Sioux Lookout, \$13,030; James Horrigan, Port Arthur, \$12,600.

Paid Visit to Paper Mills

The Toronto Club of Printing House Craftsmen paid a visit to the paper and pulp mills in the Niagara district last week and chartered a special steamer to make the trip. There were 100 in the party and the members were the guests of the Provincial Paper Mills, Toronto, under the direction of T. A. Weldon, vice president of the company. The visitors were entertained at a splendid dinner at the Clifton Inn, Niagara Falls, and later to a repast at the Welland House, St. Catharines. All the plants in the Niagara district are busy at the present time and among the mills through which a tour was enjoyed were the Montrose division of the Provincial Paper Mills at Thorold, the Interlake Tissue Mills, Merritton; the Ontario Paper Company, Thorold; Lincoln Mills, Merritton, and the Kinleith Paper Plant at St. Catharines.

Notes and Jottings of the Industry

At the regular luncheon of the Toronto branch of the Canadian Paper Trade Association, which was held last week, two new members were received, the London Paper Company, of London, and Buntin, Reid Company, Limited, Toronto.

Brenton C. Pomeroy, representing Byron Weston Company, manufacturer of ledger and record papers, Dalton, Mass., was a caller on the Toronto trade last week.

Fred W. Halls, of the Fred W. Halls Paper Company, Toronto, has returned from an extended trip to Atlanta, Ga., where he attended the Kiwanis convention and later the great gathering of Shriners at Washington.

Howard Smith, president of the Howard Smith Paper Mills, Montreal, who is vice president of the Canadian Manufacturers' Association, was in Toronto this week attending the annual convention. Mr. Smith is also a former president of the Canadian Pulp and Paper Association.

W. H. Sheriff, of the Hodge-Sheriff Paper Company, Toronto, who has been on an extended business trip to the Pacific Coast, has returned home. He reports that the business in the West is picking up wonderfully with the excellent prospect of good crops.

The Ontario Paper Company, Thorold, is now receiving large quantities of pulpwood by steamer from its limits in Quebec. The company uses about 400 tons daily at its plant.

Established 1886

Confidence

The confidence of our friends in us is not the labor of a day, but has taken all of thirty-seven years of constant, unceasing effort. Whatever success we have had is due to the constancy of our friends. To them we owe everything; without them we wouldn't be here. We have an ideal to live up to, a reputation to sustain, an enviable past, and a future—well, we leave that in the hands of our friends.

M. GOTTESMAN & COMPANY

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RUMORS OF BIG PAPER MERGER ARE CONTINUED IN MONTREAL

In Spite of Denials Press Reports Assert That Consolidation of Important Paper Concerns in St. Maurice Valley Is Not Unlikely—Belgo-Canadian Paper Co. Is Formed to Succeed Belgo Paper Co. of Shawinigan Falls—Newspaper Owners Protest Against Sales Tax on News Print—J. D. McArthur Negotiates With Montreal Syndicate for Financing Manitoba Paper Co.

[FROM OUR REGULAR CORRESPONDENT.]

MONTREAL, Que, June 12, 1923.—Newspapers here have reproduced an interview in the *Wall Street Journal* by C. R. McMillen, vice-president of the Union Bag and Paper Corporation, which controls the St. Maurice Paper Company, of Three Rivers, Que., stating that no steps have been taken toward a merger of the latter company with any mill or mills in the St. Maurice Valley. The St. Maurice Paper Company is one of the concerns mentioned in a possible merger with the Laurentide, Belgo-Canadian, and Wayagamack companies. There has been much trading in the Laurentide stock on the Montreal Stock Exchange as a result of the possibility of the merger, and the Laurentide stock has substantially increased in price during the past two weeks. Commenting on Mr. McMillen's remarks, the *Montreal Gazette* says:

"Despite what Mr. McMillen is reported to have said, there is very good reason to believe that with regard to Laurentide and St. Maurice, at least, the situation is a bit further advanced than he would seem to indicate. These two companies are reported to be examining each other's books. The situation seems to call for a Moses to lead the pulp and paper children of the St. Maurice Valley out of the wilderness of cross purposes. Such a one may develop."

The *Financial Times* of Montreal also declares that actual negotiations have been entered upon. It says:

"In spite of the denials that have appeared, *The Financial Times* is in a position to announce that definite negotiations are being carried on between responsible representatives of the Laurentide Company and the Union Bag and Paper Corporation in New York, looking towards the merger of Laurentide and St. Maurice Paper Company, which is controlled by the Union Bag.

"Officials of the Union Bag and Paper Corporation, including, it is understood, the president himself, have visited Grand Mere and inspected the plant there, while meetings have been held during the last two or three weeks between leading officials of the two companies.

"Progress has been made to such an extent that offers have already passed between the two, one looking, it is understood, to Laurentide taking over St. Maurice, and the other to St. Maurice absorbing the Laurentide mills. It seems to be the general opinion, however, of those in close touch with the two, that the final result will be that Laurentide interests will purchase the St. Maurice Paper Company, and that this will form the basis for further amalgamation that will include, in addition, the Belgo-Canadian Paper Company, and the Wayagamack Pulp and Paper Company."

Belgo-Canadian Paper Co.

Following the transfer of the Belgo Paper Company, of Shawinigan Falls, Que., from Belgian to Canadian interests, a new company, the Belgo-Canadian Paper Company, Limited, has been formed. Hubert Bierman, former managing director, has been elected president, and the remainder of the board has been completed as follows:

Sir Herbert Holt, vice-president; John Stadler, chief engineer and manager; Francois Faure, manager Forestry Department;

J. W. Ross, director of the Sun Life Assurance Company and Moisons Bank; C. E. Taschereau, N.P., director Quebec Railway and Banque Nationale; Harry Newman, of Newman, Sweezy & Co.; R. O. Sweezy, of Newman, Sweezy & Co., consulting engineer, and J. H. Gundy, of Wood, Gundy & Co.

The company is marketing the unsold balance of \$8,000,000 six per cent 20-year bonds. Net earnings available for bond interest, depreciation and income tax are reported to be 3½ times the interest requirements on the present issue, while current earnings are reported by the syndicate to be at the rate of 5½ times interest requirements.

Tax on News Print

Newspaper owners have made representation to the Government at Ottawa protesting against the fact that under the recent Budget news print was withdrawn from the list of exemptions under the sales tax. They state that it will make a difference of \$4.50 per ton on news print which will be a serious additional burden for the newspaper owners since they cannot pass the tax along to customers. The tax will add about \$500,000 a year to the paper bill of Canadian publishers, whose outlay is around \$9,000,000 per year for news print.

Manitoba Paper Company

J. D. McArthur, of Winnipeg, has been negotiating with a Montreal syndicate for financing the Manitoba Paper Company. It is understood that the plan calls for the issue of between two and three million dollars worth of bonds and the same amount of preferred stock and that Mr. McArthur would receive \$1,000,000 in preferred stock and common stock for the properties which he would turn over to the company.

Whalen Mills at Capacity

Hon. Mr. McGalley states that the Whalen Pulp & Paper Limited are operating three mills at capacity. The production is approximately 260 tons of sulphite pulp, 700,000 cedar shingles and 250,000 feet of merchantable feet of timber.

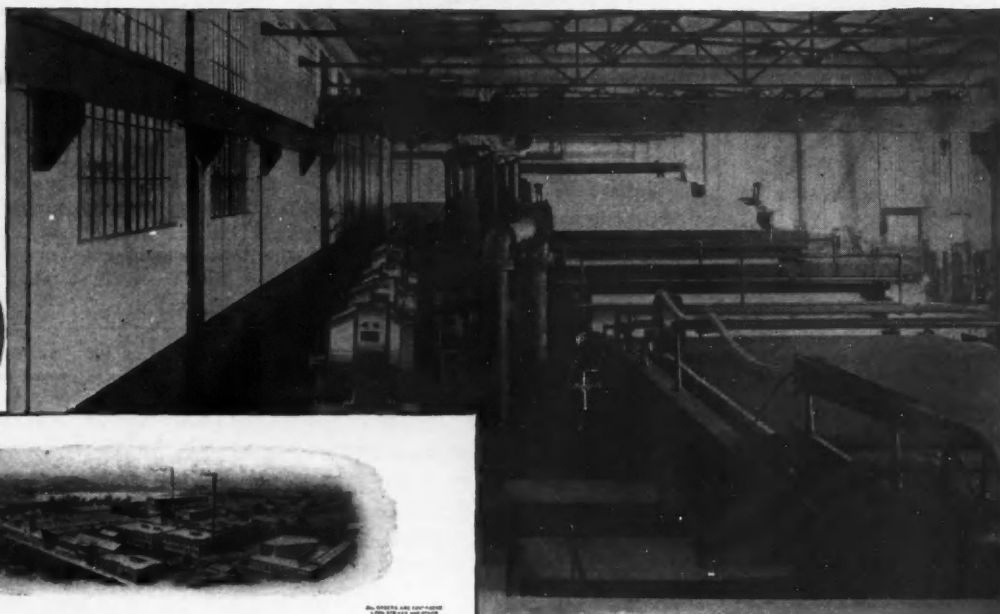
Howard Smith Extension

The Toward Smith Paper Mills are extending their plant at Cornwall, Ont., by constructing a new finishing room and an addition to the machinery. This will increase the capacity of the plant by approximately 50 per cent. The manufacturing of the book paper has been transferred to the Crabtree mill and the Cornwall mill's production will now consist of Bristol board, deckled edge paper, blotting paper, etc.

Reorganization of the Riordon Co.

The plan for the reorganization of the Riordon Company is now understood to have been agreed upon in its broad details. It is stated that there is likely to be a new capitalization of \$10,000,000 of 7 per cent prior preferred; \$5,500,000 of 7 per cent preferred and 600,000 shares of no par value common stock. Distribution of a part of this will be made to some of the present security holders. For instance, the 6 per cent general mortgage bondholders of Riordon Pulp and Paper may have their bonds cancelled and get instead a million of 7 per cent prior preferred, four and a half million of 7 per cent preferred and forty thousand shares of common stock. Holders of unsecured claims will likely get about 25 per cent in preferred and 45,000 shares of common with the right to subscribe for new securities as an alternative. Other bonds at present outstanding will probably remain. The additional \$10,000,000 that is required will be raised, it is likely, by the sale of \$1,800,000 of first and refunding mortgage bonds, by the sale of a \$1,000,000 of 7 per cent debentures and by the offering of \$7,500,000 of new prior preferred stock with a bonus of common to present shareholders and unsecured creditors. There will also be a substantial underwriting of this security. While not finally worked out it is understood that the offering to the unsecured creditors and

(Continued on page 68)



P. H. GLATFELTER CO.
PAPER MANUFACTURERS

General Electric Co.,
Schenectady, N. Y.

SPRING GROVE, PA.
Jan. 12, 1923.

Gentlemen:

Relative to your inquiry of January 12th, in reference to the Sectional Paper Machine Drive, which you furnished us for our new 170" paper machine, we are very much pleased with the simplicity of the drive and the ease with which the draws can be adjusted. At no time has the drive given us any serious trouble.

All of the men operating the paper machine are well pleased with the simple control. I might say these men have never had any electrical experience, but are now operating the machine without any assistance from the electrical department.

Yours very truly,
P. H. GLATFELTER CO.

FIG-M

G-E Sectional Paper Machine Drive is operating successfully on all makes of machines, and all grades of paper—from 50 ft. to 1000 ft. per minute. We will gladly furnish you with estimate of G-E Sectional Drive for your paper machine.

G-E Sectional Drive for Paper Machines

Installations In Operation: No.

- Glatfelter Paper Company, Spring Grove, Pa. — Book 1
- Crown Willamette Paper Co., West Linn, Ore. — News 1
- Mead Pulp and Paper Co., Chillicothe, Ohio — Book 2
- Ontario Paper Company, Thorold, Ont. — News 1
- Kimberly Clark Co., Niagara Falls, N. Y. — Book 2
- Spanish River Paper Co., The Soo — News 1
- St. Maurice Lumber Co., Three Rivers, Que. — News 4
- Consolidated Water Pr. & Paper Co., Wisc. Rapids, Wisc. — News 1
- Oregon Pulp and Paper Co., Salem, Ore.—Glassine and Grease Proof 1

Installations Under Construction:

- Kalamazoo Veg. Parch. Co., Kalamazoo, Mich. — Specialties 1
- Central Paper Company, Muskegon, Mich. — Kraft 1
- Southern Paper Co., Moss Point, Miss. — Wrapping 1
- Consolidated Water Power & Paper Co., Byron, Wisc. — News 1
- Warren Manufacturing Co., Milford, N. J. — Specialties 1

Total.....19

GENERAL ELECTRIC

New York Trade Jottings

L. B. Steward, Acting Secretary of the Forest Industries Club, has returned from a trip among the mills in the Middle West.

Friends of O. M. Porter, of the American Paper and Pulp Association, are congratulating him on the arrival of a new baby last week.

Henry Evans, president of the Continental Insurance Company, has resigned his position as vice-president and director of the American Writing Paper Company.

Dr. Hugh P. Baker, executive secretary of the American Paper and Pulp Association, is back in his offices at 18 East Forty-first street after a trip to the Middle West.

Jacob Erichsen, secretary of the Glazed, Fancy and Gunned Paper Association, 18 East Forty-first street, has returned from visiting the New England mills for several days.

Meyer J. Taubin, dealer in bagging and burlap, has removed his offices from 90 Broad street to 11 Stone street, next door to the Produce Exchanges. The new telephone number is Broad 6614.

A. A. Silverton & Co., dealers in paper mill supplies of 200 Fifth Avenue, have incorporated with a capital stock of \$25,000 and will conduct their business in the future under the name of A. A. Silverton & Co., Inc.

Newton Falls Paper Company of Newton Falls, N. Y., has opened a general sales office in the Tribune Building, 154 Nassau street, Telephone Beekman 4913, where all correspondence relative to sales will be taken care of.

It has just been learned through its president, Joseph H. McCormick, that the American Paper Mills Corporation, of New York City, has formulated a connection with the Butler Paper Corporations of Chicago, New York and San Francisco. Detailed announcement to the trade will soon be made.

The Philadelphia Paper Manufacturing Company has opened a New York office at 110 East Forty-second street. The phone number is Vanderbilt 0650. Charles M. Mead, former sales manager in the Philadelphia offices, and A. C. Buell, formerly of Bird & Son, East Walpole, Mass., will handle the shipping container business.

The National Association of Waste Material Dealers will hold its quarterly meeting at the Hotel Astor, at 2:30 o'clock Wednesday afternoon, June 20. As usual there will be a members' luncheon at 1 o'clock Wednesday afternoon, preceding the regular quarterly meeting. The Waste Paper Division will meet at 10 o'clock and the Paper Stock Division at 11 o'clock Wednesday morning.

The members of the Waste Merchants' Association of New York have filed a complaint against the B. & A. and other roads, alleging that the rates on paper stock to certain New England states and Western points from certain piers on Manhattan Island, in Brooklyn, on the Jersey Shore and in the Bronx are unjust, unreasonable, prejudicial and discriminatory because they are higher than those maintained from pier stations located on Manhattan Island. It claims that the carriers unlawfully and without justification or excuse maintain separate and distinct sets of through rates to the points of destination above referred to from points in New York Harbor and asks for the establishment of reasonable and lawful rates.

Obituary

Irving Seward Robinson

Irving Seward Robinson died on Tuesday, June 12, after a very brief illness. Mr. Robinson was connected with M. Gottesman & Co., Inc., of 18 East 41st street, New York, practically since leaving the United States Naval Service in which he held the rank of ensign. During the war he made numerous trips abroad on steamers conveying troops. He was 26 years old at his death but had already made for himself an enviable reputation for high character and great ability. He was possessed of great personality and had a host of friends.

Carter, Rice & Co. Have Outing

[FROM OUR REGULAR CORRESPONDENT.]

BOSTON, Mass., June 13, 1923.—Mayflower Grove, in Pembroke, Mass., was besieged last Saturday, June 9, by hundreds of employees of Carter, Rice & Co., of Devonshire street, on their annual outing.

The affair, the ninth annual of the company, went off without a hitch, and was one of the most successful of its kind ever held, those in authority say. The employees had been looking forward to it for weeks and weeks. There was something doing every minute, take it from William McLellan and some of the others. Everybody got what they were looking for—a good time and plenty to eat. Now that it's all over, the outing is the talk of the building. No one knew that it could be quite such a success, even with such capable management.

Credit for the big success is due E. L. Boyd, chairman; J. C. Murray, treasurer, and C. H. Beckwith, in charge of transportation. Other committees were: Sports, Fred Herbolzheimer, chairman; Anna Stevenson, William McLellan, Gertrude Killoran and George McLaughlin; entertainment, Lou Blake, chairman; Walter S. Howard, Dora Boyd and Wilbur L. Woodbury; tickets, Donald Smith, Anna Stevenson, John Bradford and May Barry.

Government Paper Bids

WASHINGTON, D. C., June 15, 1923.—The Purchasing Officer of the Government Printing Office has received the following bids for five reams white railroad board, 22 x 28—500, approximately 270 pounds:

R. P. Andrews Paper Company, \$23.60 per ream; Broderick Paper Company, \$32.50; Whitaker Paper Company, \$26.50; Mathers-Lamm Paper Company, \$24.75; Carter, Rice & Co., \$25.99; Old Dominion Paper Company, \$25.47; \$22.47; \$22.74.

The Purchasing officer of the Government Printing Office will receive bids on June 15 for 57,950 lbs. (600 reams) of sulphite manila paper. Bids will also be received on June 18 for 1,000 lbs. of 24x38 16 White Paraffin paper.

New York Superintendents to Meet

WATERTOWN, N. Y., June 11, 1923.—The Northern New York Division of the American Pulp and Paper Mills Superintendents' Association will hold their Spring meeting at the Woodruff Hotel, Watertown, N. Y., June 21, 1923. Afternoon and evening session.

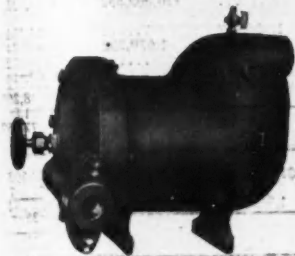
The afternoon will be devoted to business, electing new officers and visiting the Bagley & Sewall Plant. In the evening we will have the banquet and speaking.

Goes With Grass Fibre Pulp & Paper Co.

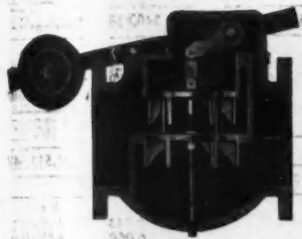
LOCKLAND, Ohio, June 11, 1923.—Robert Holz, chemical director of the Richardson Company, has resigned to become general manager of the Grass Fibre Pulp and Paper Company at Leesburg, Fla. This concern has just completed a plant for the manufacture of pulp and paper from the saw-grass which grows in the swamps around the lakes of Florida.



No. 1 Piston Type Pressure Regulator



Improved Continuous Discharge Steam Trap



Patented Noiseless Back Pressure Valve

SOLVE YOUR Valve Specialty Problems By Specifying KLIPFEL-SWAN SPECIALTIES

Since 1902 the Klipfel Manufacturing Company has manufactured Klipfel-Swan Valve Specialties for controlling Pressure, Temperature and Humidity. These devices—simple, rugged and dependable are the embodiment of good design and careful workmanship.

Quality Products

The modern Klipfel plant makes possible the quality and quantity production of these specialties. For over 20 years Engineers specifying Klipfel-Swan products have found that they give maximum performance for minimum attention and maintenance expense.

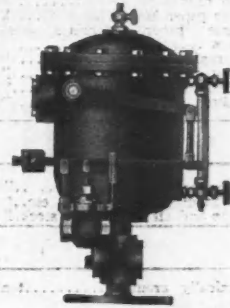
Illustrated Catalog No. 20 is yours for the asking. Send for it!

Klipfel Manufacturing Co.
2641-59 West Harrison Street,

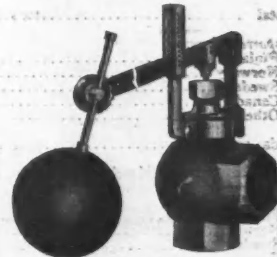
ADVERTISING Chicago, Illinois
DEPT.



No. 2 Piston Type Pressure Regulator Expanded Outlet



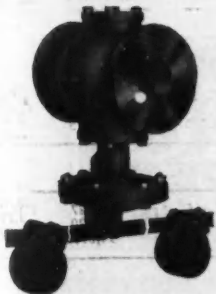
Automatic Pump Regulator and Condensation Receiver



Balanced Float Valve with Seamless Copper Float

Klipfel-Swan Specialties

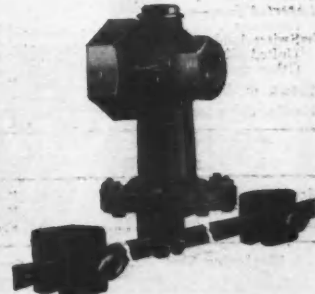
for controlling Pressure, Temperature and Humidity



No. 3 Diaphragm Type Pressure Regulator



Water Level Controller For Water Tank used in Connection with our Balanced Lever Valve



No. 4 Diaphragm Type Pressure Regulator-Expanded Outlet

PAPER AND PAPER STOCKS IMPORTS AND EXPORTS OF THE UNITED STATES

For the Month Ending February 28, 1923, and for the Eight Months Ended February 28, 1923, as Compared with Corresponding Months of Two Previous Years

PAPER AND MANUFACTURERS OF	February				Eight Months Ended February 28			
	1922		1923		1922		1923	
	Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value
Paper, except printed matter (total).....		\$6,352,605		\$7,891,321		\$54,437,115		\$63,010,723
Printing papers—								
Standard newspaper.....lbs..Free	164,780,569	\$5,709,753	178,990,725	\$6,713,684	1,214,021,537	\$49,102,299	1,479,575,299	\$52,901,405
All other, n. e. s.....lbs..Dut.	51,572	6,218	891,558	50,852	276,917	39,133	6,661,077	379,506
Grease proof and waterproof papers.....lbs..Dut.			89,067	11,711			1,003,050	189,974
Wrapping paper.....lbs..Dut.	1,886,000	68,237	6,147,537	284,202	10,831,366	416,373	56,879,930	2,509,537
Writing, drawing, bond, etc.....lbs..Dut.			221,757	45,310			1,209,531	129,470
Surface coated.....lbs..Dut.	62,771	12,510	108,469	29,181	433,107	96,126	651,498	177,904
Tissue papers.....lbs..Dut.			188,794	84,056			1823,935	1336,740
Paper boards—								
Pulp boards in rolls.....lbs..Dut.	4,784,063	141,349	6,484,613	170,098	22,951,443	611,440	37,053,628	918,325
Other paper boards, n. e. s.....lbs..Dut.			2,735,350	73,414			10,809,852	1304,135
Cigarette paper, cigarette books and covers.....lbs..Dut.		110,592	658,832	150,079		1,976,497		12,413,386
Photographic paper.....lbs..Dut.	172,049	22,777	76,146	17,419	1,389,349	224,150	1,670,352	344,874
Hanging paper.....lbs..Dut.		55,050	807,002	53,621		252,764		410,072
Decalcomania, not printed.....lbs..Free		2,396	7,229	1,680		59,425		63,118
All other.....lbs..Dut.		223,723		206,014		1,658,908		1,872,197
CRUDE PAPER STOCK.								
Rags for paper stock.....lbs..Free	22,297,318	\$322,111	23,287,651	\$403,538	128,869,541	\$1,896,004	228,404,487	\$3,738,298
Waste bagging, waste paper, etc.....lbs..Free			9,759,752	143,078			469,664,542	1871,887
Old rope and all other paper stock.....lbs..Free	12,228,830	297,355	5,280,052	248,295	93,877,261	1,989,601	97,963,002	3,077,352
WOOD PULP.								
Mechanically ground.....tons..Free	8,159	\$263,895	24,791	\$874,187	160,841	\$4,189,727	173,380	\$5,435,437
Chemical—								
Sulphite, unbleached.....tons..Free	29,424	\$1,858,023	51,268	\$2,138,257	226,059	\$12,783,389	372,322	\$18,693,179
Sulphite, bleached.....tons..Free	12,667	1,088,514	22,035	1,867,406	89,714	7,711,067	168,536	14,153,802
Total.....tons..Free	42,091	\$2,946,537	73,303	\$4,005,663	315,773	\$20,494,456	540,858	\$32,847,071
Imported from—								
Finland.....tons			11,534	\$401,073			34,239	\$1,703,446
Norway.....tons			9,097	575,900			50,889	3,500,646
Sweden.....tons			21,116	1,240,664			233,958	12,748,100
Canada.....tons			30,576	1,714,800			204,702	13,889,878
Other countries.....tons			980	73,226			17,070	1,023,007
Soda pulp.....tons..Free			200	\$13,110			1,066	1467,492
Sulphate pulp, unbleached.....tons..Free	17,002	\$1,072,050	12,636	\$819,281	156,566	\$9,355,318	197,878	\$11,513,643
Imported from—								
Finland.....tons			203	\$10,727			9,553	\$468,901
Norway.....tons			656	34,101			6,069	320,690
Sweden.....tons			2,388	126,359			89,490	4,678,036
Canada.....tons			9,389	648,094			92,106	6,009,004
Other countries.....tons							660	37,011
Sulphate pulp, bleached.....tons..Free	231	\$16,477	1,159	\$83,397	4,803	\$297,216	20,166	\$1,156,774
Other pulp.....tons..Free			30	464			683	19,520
CHEMICALS AND OTHER PAPER MAKERS' MATERIALS.								
Color lakes.....tons..Dut.							239	\$1262
Indigo—								
Natural.....tons..Dut.			660	\$469	20,619	\$26,626	10,587	12,355
Synthetic.....tons..Dut.					413,192	224,149	14,257	12,584
Dyes, colors, stains, etc.....tons..Dut.							806	91,599
Colors or dyes, n. e. s.....tons..Dut.	219,140	249,589			2,194,238	3,162,203	1832,001	11,408,192
Colors, dyes, stains, color acids, and color bases, n. e. s.....tons..Dut.			286,097	\$376,261			1,411,184	\$1,895,148
Imported from—								
Germany.....tons			173,754	\$203,246				
Switzerland.....tons			36,602	56,146				
United Kingdom.....tons			688	1,637				
Other countries.....tons			75,053	115,232				
Casein or lactarene.....tons..Free	1,488,824	\$99,383	3,271,959	530,835	6,318,313	\$397,720	13,288,534	\$346,431
Kaolin, china, and paper clay.....tons..Dut.	14,887	161,591	23,178	267,669	115,940	1,193,306	213,715	2,289,832
PULPWOOD.								
Rough.....cu. ft..Free	7,003	\$60,926	27,311	\$213,851	112,649	\$1,375,865	207,927	\$2,016,615
Peeled.....cu. ft..Free	85,355	\$67,948	64,013	592,759	354,067	3,941,778	485,720	4,770,767
Reseed.....cu. ft..Free	3,266	36,594	4,413	46,166	48,256	748,182	94,077	1,303,203

¹Beginning Sept. 22. ²July 1 to Sept. 21.

(Continued on page 42)

SULPHATE OF ALUMINA

IRON-FREE

A GOOD BUYING GUIDE

In buying your *Sulphate of Alumina*, let the 84 years of chemical experience behind the GRASELLI name be at once your guide and your protection. Your satisfaction is certain because the name GRASELLI not only stands for years of experience and leadership but the utmost in chemical purity and quality.

GRASELLI GRADE SULPHATE OF ALUMINA, Iron Free, is particularly adapted to the production of those fine papers where it is essential to prevent discoloration of the paper stock. It will give unfailingly uniform results.

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GRASELLI GRADE

A Standard Held High for 84 Years

PAPER AND PAPER STOCKS IMPORTS AND EXPORTS OF THE UNITED STATES

(Continued from page 40)

EXPORTS—PAPER.

PAPER AND MANUFACTURES OF	February 1922		February 1923		Eight Months Ended February 28, 1922		February 28, 1923	
	Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value
Paper, except printed matter (total).....		\$1,485,681		\$1,955,557		\$12,137,095		\$16,235,096
PRINTING PAPER—								
News Print	1,671,034	\$75,724	2,387,588	\$121,405	20,702,816	\$1,002,769	26,084,253	\$1,245,084
Exported to—								
Canada	120,416	\$8,095	18,433	\$6,556	263,317	\$18,583	1,356,196	\$83,959
Central America	91,758	5,000	144,839	8,333	1,519,896	85,100	1,067,388	58,336
Cuba	1,162,276	47,627	1,494,042	66,282	10,754,317	494,837	12,896,403	554,293
Argentina					2,860,169	113,294	2,274,830	91,120
Other South America	257,593	12,864	81,889	6,839	1,512,794	80,967	2,803,001	143,658
China					394,621	18,806	442,999	41,407
Japan							594,388	21,530
Philippine Islands							3,307,867	160,086
Other countries	38,591	2,138	188,045	8,845	1,448,259	89,971	1,341,181	90,695
Book paper, not coated.....	1,353,145	\$145,784	2,379,421	\$261,389	12,481,158	\$1,402,390	20,346,670	\$2,008,612
Exported to—								
United Kingdom	52,137	\$11,170	66,186	\$13,768	254,196	\$49,964	430,110	\$90,638
Canada	182,370	22,325	166,927	21,968	1,811,130	208,254	1,794,752	199,329
Central America	15,234	1,980	43,116	5,805	395,417	56,967	341,146	37,573
Mexico	173,100	17,081	127,881	14,476	2,101,988	243,312	1,766,592	137,868
Cuba	151,422	16,662	643,526	72,382	1,387,671	142,371	4,750,342	472,302
Argentina					261,329	36,028	1,340,669	125,853
Brazil	7,352	1,056	8,675	8,675	347,506	54,775	1,104,542	118,194
Venezuela	19,431	1,901	82,267	8,328	412,260	49,898	1,051,076	50,157
Other South America	23,363	2,722	18,869	2,280	608,324	62,573	1,224,771	117,821
British India	77,225	9,695	146,105	13,522	395,590	38,797	136,118	16,190
China	73,178	8,187	21,536	2,839	1,100,982	112,643	913,146	82,531
Japan	123,300	12,156	114,410	11,335	1,490,317	141,130	1,932,611	150,180
Philippine Islands	165,623	12,118	259,253	20,900	811,580	88,087	2,828,503	250,388
Australia	132,397	12,959	462,693	46,657	436,296	43,584	640,177	67,997
Other countries	56,600	5,672	104,178	11,665	666,572	74,007	692,115	71,591
100,513	10,166	48,825						
Cover paper	75,866	\$12,092	65,333	\$9,881	\$189,940	\$28,579	1,061,964	\$145,391
Grease-proof and waterproof paper.....	23,984	3,652	163,968	19,943		53,512	859,441	114,145
Wrapping paper						\$777,175		
Kraft	70,027	4,905	40,611	3,398	\$126,680	\$9,681	440,582	35,112
Other wrapping	2,680,671	166,943	2,206,421	169,783	\$4,741,547	\$310,832	19,462,339	1,383,537
Writing paper and envelopes.....						\$1,033,894		
Writing paper, except in paperies.....	379,817	62,049	545,229	80,204	\$1,069,166	\$177,937	5,040,854	745,035
Surface-coated paper	200,953	36,474	232,652	42,448	\$430,243	\$64,831	2,445,652	355,734
Tissue and toilet paper						\$398,118		
Tissue and crepe paper.....	227,241	47,791	312,649	64,203	\$343,365	\$83,568	2,172,909	565,980
Toilet paper	302,768	33,325	343,152	40,093	\$590,422	\$66,211	3,370,299	371,488
Paper towels and napkins.....	65,244	11,837	43,720	9,811		\$95,274	600,743	108,207
Bristols and bristol board.....	57,222	8,720	445,805	28,481	\$116,113	\$20,690	1,367,766	113,888
Paper board and straw board.....	2,746,810	121,347	3,118,419	164,108		\$949,649	31,370,527	1,428,257
Sheathing and building paper.....	363,824	13,915	145,381	7,561	\$620,412	\$21,191	4,012,078	137,034
Wall board of paper or pulp.....	556,263	20,782	1,126,175	40,633		\$230,615	8,446,091	286,775
Cigarette paper and books.....	24,925	13,016	26,105	9,149	\$85,898	\$26,668	452,142	160,051
Photographic paper	77,663	66,585	88,601	104,125	\$241,792	\$247,859	834,499	910,191
Paper hangings (wall paper)	1,674,730	52,863	2,329,461	58,583		\$245,768	11,805,152	265,496
Paper bags	1,188,470	102,780	1,043,976	102,283		\$18,469	7,113,488	641,095
Boxes and cartons.....	508,094	40,505	765,664	75,761		\$689,200	\$787,951	580,657
Carton paper	42,623	32,689	52,455	47,589		\$273,830	\$43,347	343,139
Envelopes	128,514	27,173	162,160	31,483	\$374,485	\$71,037	1,678,953	330,603
Playing cards	207,300	32,606	1,041,162	107,336		\$248,735	\$882,879	695,875
Cash register and adding-machine paper.....	36,203	4,493	62,561	6,460		\$74,432	\$657,763	68,916
Paper ties (writing paper in boxes).....	15,878	6,571	15,974	6,702		\$31,965	\$12,729	95,352
Other paper and paper products, n.e.s.....	2,745,056	341,060	3,306,703	342,745		2,971,452	29,046,425	3,099,422
Books, maps, pictures and other printed matter.....	2,897,079	\$1,042,804	3,642,559	\$1,254,940		\$11,899,667	31,362,850	\$11,611,615
Books, maps, pictures and other printed matter.....						\$9,481,915		
Books and Pamphlets.....	1,438,555	\$481,912	1,929,411	\$619,417	\$2,783,519	\$1,051,261	15,934,189	\$5,534,094
Maps and charts.....	7,416	10,709	15,007	10,737	\$27,287	\$41,145	111,176	111,913
Music in books or sheets.....	32,695	25,375	37,925	35,459	\$60,235	\$46,952	324,338	229,319
Souvenir post cards.....	142,767	20,288	115,737	19,417	\$356,953	\$47,926	283,427	130,591
Lithographic printed matter, except post cards and maps.....	87,816	49,022	132,493	78,013	\$245,915	\$110,086	1,259,196	947,247
Other printed matter.....	1,187,830	455,498	1,411,986	491,897	\$3,164,983	\$1,120,383	13,450,524	4,658,458

WOOD PULP AND PAPER STOCK.

Sulphite wood pulp.....	1,564	\$68,917	2,277	\$127,376	\$3,442	\$158,117	9,905	\$570,143
Soda wood pulp.....	83	7,467	150	16,466	\$511	\$48,433	1,707	138,417
Other wood pulp.....	155	11,445	154	8,634	11,994	632,161	1,623	56,624
Rags and other paper stock.....	6,890,777	105,747	5,460,322	127,764	38,594,474	593,105	38,534,324	773,599

PAPER AND PULP MILL MACHINERY.

Paper and pulp mill machinery.....	986,520	\$310,810	976,908	\$153,823		\$1,935,837	7,182,792	\$1,102,070
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Beginning Sept. 22, July 1 to Sept. 21.



RESULTS!

Results count.

Westinghouse Sectional Paper Machine Drive has been in use long enough for operating results to substantiate our early claims.

High production efficiency, low maintenance and improved mill conditions have been obtained—in every instance.

Our nearest district office will be glad to explain in detail the advantages of this new and improved drive.

Westinghouse
Electric & Manufacturing Company
East Pittsburgh, Pa.
Sales Offices in All Principal
American Cities

Westinghouse

Editorial

Vol. LXXVI New York, June 14, 1923 No. 24

HENRY J. BERGER, Editor

SEASONABLE QUIETUDE

The reports which have been circulated rather freely since the beginning of June of a slowing down in the paper industry will probably cause no grave concern and certainly will not tend to discourage paper manufacturers. The less active demand undoubtedly simply indicates that the usual mid-summer quietude is making its appearance rather earlier than was expected and beyond that the present rather quieter condition than has prevailed for some time past have no important significance.

It is true that only a few months ago the very optimistic members of the industry were predicting that the unusually great demand then prevailing would continue only slightly diminished throughout the summer. But that was obviously too rosy a view to take and was not shared by the more thinking manufacturers. Perhaps the slight slump that is being experienced now is, after all, a healthful sign as it indicates that business is being done in the conservative manner which the thoughtful men in the industry have hoped for ever since signs began to appear of a runaway market last fall.

The lull now, which is likely to continue throughout the summer, means that business will be resumed in the autumn on a sound, safe basis.

Judging from present aspects prices are not likely to show much change during the summer months. Manufacturers recently, although having to contend with higher costs of production during the months just passed, in their endeavor to keep the market staple wisely were not tempted to increase paper prices and it is not likely that they will be less sensible now and try to force business in the near future by lowering their quotations. Raw materials are not likely to change much in price, labor costs are certain to continue on their present plane and under all the circumstances price cutting on paper seems too senseless to think about. It is to be hoped, at any rate, that the "silly season" which is just beginning will find paper men maintaining level heads, and if this happy consumption obtains throughout the summer it will be reasonable, after the renewal of business in the autumn, to look for a long, prosperous period in the paper business.

CREDIT WASTE

The rather startling statement is made by Mr. J. H. Tregoe, secretary of the National Association of Credit Men that credit waste during 1922 amounted to at least five hundred million dollars.

The commercial and economic changes in our country during the past quarter of a century are astonishing. In 1896 the chief economic problem was low prices. How to levitate prices brought many suggestions, which culminated in the theory of free silver.

In comparing credit conditions of today with the earlier period, this levitation of price and acceleration of commerce must be taken into account. Bradstreet's record 1,086,056 enterprises in

1896. In 1922 the number had increased, according to the same authority, to 2,074,617. The commercial fatalities in 1896 were 1.20 of the enterprises; in 1922, 1.08.

From 1896 commercial failures did not rise above 1 per cent in any year, except during 1915 and 1922.

For the decade prior to 1896, there was but one year in which the fatalities were less than 1 per cent. The excess of liabilities in the failures of 1922 as compared to the excess of 1896 is very much larger in volume, but on the basis of 1896 prices, this disproportion would disappear. The failures of 1922 were more numerous than the failures of 1921, but the liabilities involved were slightly larger in 1921.

In a survey of this subject, we must take into account the very many friendly liquidations of which no public record is made and that could hardly be computed in the statistics of the agencies. Mr. Tregoe is therefore led to say that the credit waste of 1922 was at least five hundred millions. The serious side of this survey is that a large share of this loss could not be charged directly to credit departments.

Producers and distributors were swept off their feet and the most serious orgy indulged that ever was registered in American history.

If this severe depletion of the nation's wealth serves as a lesson and will lead to more intelligent uses of credit, it will have proved a good investment, not a waste.

The improper use of credit is the main cause of our depressions. All of us recognize that this is true of the depression from which we have just emerged. If this be so, how can a commercial enterprise or industry spend unlimited sums on buying, producing and selling, but leave its credit department out of its program and treat it as if it were a useless expense? To produce without consultation with a soundly functioning credit department, to buy without collaboration with it, to sell without giving that department proper co-operation, reflects a lack of balance that has affected again and again our upward and downward trends and is causing a huge volume of loss.

If a credit department does not produce as much for an enterprise as other departments, something is wrong in its management. If the proper position of a credit department is not recognized by the enterprise, there is something wrong with the management's intelligence and backbone.

The business of the country needs nothing so much as a proper appreciation of credit and its wise management. If we can get credit under control, governing its uses by skill and good judgment, limiting its abuses by fortitude and courage, we shall get rid of the violent fluctuations of the business cycle and enter upon a new era in our economic life. But to accomplish this result, the credit manager must play a big part. If he is content to take the "burnt bacon" and play the little part in his enterprise, we have a weak member of the fraternity of credit men who is hindering a useful project. The credit manager should be conscious of his worth to his enterprise. If he does not believe in himself, how can he expect others to believe in him? A strong consciousness of good credit management in helping the nation's business, must precede a demand for a recognition that will bring credit into its proper place.

Holyoke Manufacturers to Meet Employees

[FROM OUR REGULAR CORRESPONDENT.]

HOLYOKE, Mass., June 11, 1923.—The implied threat of a strike in the last communication to the paper manufacturers from the Allied Paper Trades Council did not succeed in terrorizing the manufacturers to any great extent. They thought, however, that it would be wise to continue the policy of conciliation and in session authorized Adam Wilkinson to issue the following letter:

"It is apparent that an exchange of communications or attempts through conferences with large committees are not conducive to bringing about a mutual understanding that leads to a settlement of controversial matters.

"With a view of maintaining amicable relationship and effecting a settlement of questions that are in controversy, the paper manufacturers make the following proposal:

"That a committee of three representatives of the manufacturers meet with a committee of three representatives of the employees for the purpose mentioned above.

"The manufacturer's committee of three members stands ready to meet your committee of like number at a time and place mutually acceptable."

"If the foregoing proposition meets with your approval, please arrange with the undersigned as to the time and place of meeting."

To this the Allied Paper Trades Council, after a meeting Sunday, agreed to the meeting, but desired to retain the same committee as had acted heretofore. Their letter in answer was as follows:

"Your communication dated June 8, 1923, was read at today's meeting of the Allied Paper Trades Council. By vote of the council, the original committee stands as heretofore representing the several locals in the council and we ask that you make arrangements to meet the committee not later than Wednesday, June 13."

Westfield River Paper Co. to Reorganize

HOLYOKE, Mass., June 11, 1923.—The Westfield River Paper Company of Russell, purchased by Karl Becker of New York, will undergo a complete financial reorganization with a view of increasing production, according to a statement issued by Mr. Becker. Alfred H. Chapin, president of the Moore Drop Forging Company of Springfield, has been elected president of the new company.

The old board of directors resigned and new officers were appointed, as follows: President, Alfred H. Chapin, president of the Moore Drop Forging Company, Springfield; first vice president, Karl Becker, vice president of the Becker Paper Corporation, New York; second vice president, Folke Becker, present mill manager of the Westfield River Paper Company; treasurer, Mr. Chapin. The office of secretary has not yet been settled by the board of directors.

According to Mr. Becker there will be a complete financial reorganization of the company and all the present capital stock of the company will be retired and a new financial setup will consist of \$340,000 of 7 per cent 20-year gold bonds and about \$125,000 preferred stock issued with \$10,000 shares of common stock of no par value.

The company is well known in the paper trade as a successful manufacturer of high-grade glassine paper.

Marinette & Menominee Co. to Build New Mill

[FROM OUR REGULAR CORRESPONDENT.]

APPLETON, Wis., June 12, 1923.—Announcement was made last Friday by J. H. Delbridge, president of the Marinette and Menominee Paper Company, that a new paper mill is to be built by his company in Menominee, Mich. Work is to be started at once and it is planned to have the mill in operation within a year. The mill in reality will be an addition to the present Menominee plant.

The structure will be designed to house two paper machines, but only one will be installed now.

Mr. Delbridge said it was originally intended to build the new mill either at Marinette or Oconto in Wisconsin, but the hostile attitude of the Wisconsin Legislature toward industry persuaded his company to transfer operations into Michigan, which is much fairer in its treatment of corporations. Mr. Delbridge is one of a large number of manufacturers who said several weeks ago that plans for industrial expansion in Wisconsin were nullified by the efforts of radical legislators to place an unfair burden on capital.

Only a few weeks ago the Great Lakes Paper Company was organized to take over the paper bag business of the Thilmann Pulp and Paper Company, and that company's bag machinery now is being moved to a new factory in Waukegan, Ill. Other manufacturers also have announced their intention of moving their plants out of the State.

Valley Paper Mills Elects Directors

[BY OUR REGULAR CORRESPONDENT.]

APPLETON, Wis., June 11, 1923.—Directors for the Valley Paper Mills, the new Neenah corporation which is erecting a paper-mill in the town of Menasha, were elected last week. They were Albert Ehlman, Milwaukee; George W. Burnside and W. F. Wolf, Neenah; William Fogarty, Green Bay; George T. Wolf, Theresa; Fred Schreiber, Appleton; A. R. Bechand, Fond du Lac. Officers are to be elected in about a week. Approximately 100 stockholders representing 60 per cent of the paid up stock attended the meeting.

Excavation was started last week for the boiler house and filtration plant at the new mill. This structure will be 300 feet long by 75 feet wide.

The main building, for which the walls now are complete, will be 175 feet wide by 637 feet long. Two papermachines, trimming 132 and 142 inches, are to be installed. The promoters expect an annual production of 15,000 tons of opaque catalog, French folio, railroad manila, manifold, flat writing and light weight specialties. William C. Nash has been elected superintendent and designed the new plant.

It is understood that paper machines have not been ordered as yet.

To Confer on Paper Standardization

WASHINGTON, D. C., June 11, 1923.—Since August, 1921, various committees have been co-operating with the Bureau of Standards in regard to the standardization of paper. These committees have, from time to time, submitted reports which have been referred to interested organizations for their consideration. It is now proposed to hold a general conference June 19 at which these reports will be discussed and in order that the bureau may make recommendations. The subjects listed below are those that are to be considered:

Classification and definitions of paper terms, C. J. West.

Sizes of paper for general commercial printing, G. H. Heintzmann.

Sizes of paper for books and magazines, F. W. Hume.

Sizes of paper for catalogs and directories, C. C. Whinery.

Sizes of paper for bond, writing, and ledger forms, Maurice Saunders.

Technical Standardization, (Standard substance, specifications, sampling, testing and tolerances), R. S. Hatch.

F. A. Curtis Resigns from Bureau of Standards

(BY TELEGRAPH TO THE PAPER TRADE JOURNAL)

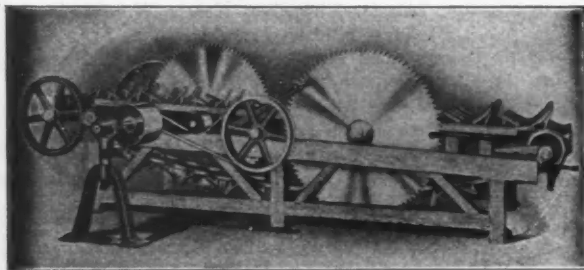
WASHINGTON, D. C., June 13, 1923.—F. A. Curtis, chief of the paper laboratory of the Bureau of Standards, has tendered his resignation from the Bureau effective June 30. Mr. Curtis has been in charge of the laboratory for the past four years and is leaving to become associated with the American Writing Paper Company where he will do some special work.

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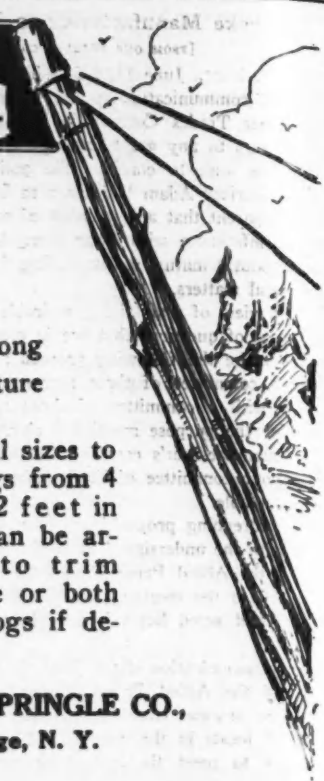
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is the most efficient and the lowest cost method of reducing long logs to uniform short lengths suitable for further manufacture into pulp and paper.

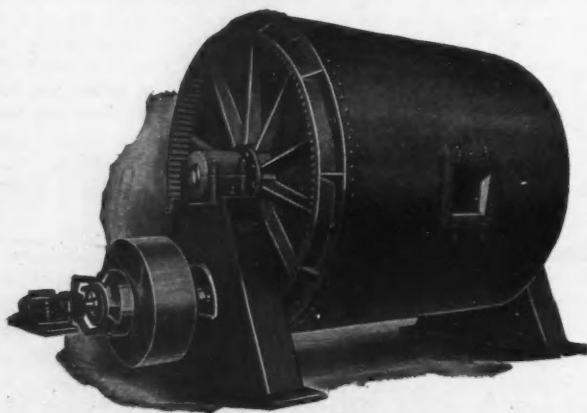


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Section of the

Technical Association of the Pulp and Paper Industry



AN ORGANIZATION FOR THE ENCOURAGEMENT OF ORIGINAL INVESTIGATION AND RESEARCH WORK IN MILL ENGINEERING AND THE CHEMISTRY OF PAPER, CELLULOSE AND PAPER-MAKING FIBERS GENERALLY; IT AIMS TO PROVIDE MEANS FOR THE INTERCHANGE OF IDEAS AMONG ITS MEMBERS IN ORDER THAT PROCESSES OF MANUFACTURE MAY BE MADE MORE EFFICIENT AND IMPROVED ALONG TECHNICAL LINES.



Conducted by W.G. Mac NAUGHTON, Secretary

DEGREE OF HYDRATION AND DEGREE OF BEATING*

The term hydration is used to denote the absorption of water by cellulose fiber, a phenomenon which takes place in a typical manner when ordinary hide glue is placed in cold water. Vegetable fibers behave in a similar manner, but the absorption of water is different according to conditions. For example, there is a different degree of absorption or hydration when the fiber is placed in water from what takes place when it is allowed to remain in a moisture-saturated atmosphere. The incrusting materials, on the surface of the fibers, have an effect on the absorption. This process is also dependent on the time temperature and degree of beating to which the fibers have been subjected, that is the amount of water absorbed is influenced by the mechanical treatment that the fiber receives in the beating engine.

Indication of the Degree of Hydration

In fact the results obtained by examining the beaten fiber with the Schopper degree-of-beating tester serve as an indication of the degrees of hydration that the fiber attains during this treatment. The degree of hydration is also influenced by the chemicals used in the manufacturing processes, such as sulphuric acid in the manufacture of parchment paper, and caustic soda used in the mercerization process. These chemicals promote the hydration of the fibers, as do other chemicals, such as zinc chloride, calcium thiocyanate and others. When the hydrated fiber is subjected to drying, great care must be taken that the drying process is carried out under proper conditions, otherwise, the fiber does not retain the original water absorbed, that is hydrating properties.

Wood chips that are digested with sulphite liquor are also subjected to a hydration process due to the action of the chemicals. Experiments have shown 100 parts by weight of the dry wood chips will absorb from 150 to 500 parts by weight of the digestion liquors. The quantity of liquor absorbed by the wood increases as the percentage of sulphur dioxide in the digestion liquors is increased. However there are also several other factors which affect the degree of hydration of the wood, such as the time consumed in the digestion process, the temperature at which it is carried out, and the presence of a gas space over the mixture of wood chips and liquor in the digester. Similarly the degree of hydration is influenced by whether the digestion liquor is kept in motion or allowed to remain at rest. It is more difficult to impregnate wet wood than dry wood, but wood which has been overdried, absorbs no liquor at all for all practical purposes. The impregnation of the wood with the digestion liquors can be accelerated by the use of hydraulic pressure. In the manufacture of chemical wood pulp

by the soda process, overhydration can be obtained, which has the effect of making further absorption of the digestion liquors still more difficult. The old debated question whether or not the quantity of sulphate, which is carried in the digestion liquors in the sulphate process, has a bad or good effect, must be answered in this way, that the sulphate content has a bad effect on the process, for this salt as every other salt, which is present in a definite concentration in the solution, serves to increase the difficulty of the hydration process.

Decreasing Hydration by Storage

In the manufacture of paper many paper stocks require a nine hour period for hydration, before they have absorbed the maximum amount of water that they can hold when these stocks are kept in contact with water for still a longer time, then it is even possible for the water content of the paper stock to be decreased. The question is accordingly propounded by Redner whether or not this phenomenon might not allow it to be suspected that the hydration of moist chemical wood pulp can be reduced by the pulp remaining in storage for several months. Small amounts of different inorganic salts can exert a disturbing action on the hydration process and can also retard the attainment of a definite degree of beating of the pulp. However, it has not yet been determined whether or not a high degree of hydration in a paper stock confers any particular advantage on the paper that is made from it.

In the manufacture of vulcanized fiber and parchment paper the entire process is in the nature of a pure hydration of the fibers. In the making of artificial silk the cellulose is hydrated and caused to swell before it is made into a solution and then it is dehydrated by coagulation. The hydration process has a bad effect on the manufacture of nitrocellulose, in case the cellulose is partly converted into a slime during the beating.

Methods of Determining the Degree of Hydration

The degree of hydration may be determined in various ways. The adsorption method may be used, wherein the fiber is immersed in a solution of caustic soda of given concentration for a certain length of time, and then is tested to see whether and how much the caustic soda content of the solution has been reduced thereby. Another test is to determine the copper hydrate number; this test, however, gives inaccurate results with chemical pulp. It is also possible to make the fibers absorb mordant salts and the amount absorbed can be determined. The hydrolytic action that takes place when hydrated paper stock is mixed with water can serve as an additional viewpoint from which to consider the hydration process. It has been found that hydrated paper stock hydrolyzes more readily than paper stock which has not been hydrated. However this

*Abstract of a long address, delivered by Dr. Carl G. Schwalbe, before the annual meeting of the Association of Paper Chemists and Engineers of Germany.

process is difficult to carry out and is not satisfactory for various reasons. Physical methods such as the determination of the viscosity through the measurement of the rapidity of the flow of material from an orifice, or the determination of the time for the discharge of a given quantity of material, or else the establishing of the time that it takes for a ball of given diameter and weight to fall a certain distance in a column of paper stock are not suited for this purpose. The determination of the degree of settling that takes place offers greater advantages than the other methods. Prof. Klemm has worked out an instrument for testing paper stock by this method. However, the data that are obtained by this method are not entirely free from error. The determination of the volume in wide cylinders is not suited at all for this purpose, as it is practically impossible to secure any accurate readings. Better results might be obtained with narrow cylinders. The various instruments that are in use to test the degree of hydration and are based on the determination of the hygroscopic condition of the material, are subject to error due to the humidity of the atmosphere in which the determinations are made. The only way in which to obtain accurate and comparable results by this method is to carry out the tests in a dessicator in which is placed a bath of concentrated sulphuric acid of definite strength which removes from 80 to 90 per cent of the humidity in the air.

Use of Schopper-Riegler Apparatus

The Schopper-Riegler instrument may be used to determine the amount of water held by the fiber in an indirect manner by establishing the quantity of water that is discharged from the apparatus. Conducting this test by sucking in the water is not recommended, as the suction pressure cannot be maintained constant throughout the progress of the experiment. For this reason the following process was adopted for measuring the degree of hydration in paper stock. A coarsely woven screen was made and on top of this another was placed made from finer woven material. These screens were then centrifuged and the time of centrifuging was measured. This simple process worked very well.

(After the address was concluded, a short discussion followed). The chairman of the meeting, Prof. Klemm, recommended that the problem be tackled not only from the photomicrographical standpoint but also from the micro-kinematographic standpoint.

Prof. Heuser made some remarks concerning the importance of the investigation of the pantosans, which amount to as much as 28 per cent in straw. He confirmed the fact that pure cellulose as well is able to effect a decomposition of salts. Prof. Klemm remarked that the sedimentation tester, which was devised by him some time ago, was intended only for the examination of half beaten stuff, as this possessed the characteristics of the half stuff bought and sold on the market. The lecturer said that certain errors were introduced due to the crumpling up of the surface of the deposited cake. The stages of beating produced in a paper stock were too small to make it possible to obtain accurate results with the simple sedimentation tester. The curving of the surface could, however, be readily prevented by allowing a piston to move in the cylinder, whereat the piston rod could be used simultaneously as a measuring rod. If the piston was loaded with 500 grams to one kilogram weights, then a definite compressed volume is obtained, which stands in a definite relation to the volume of deposit, especially when the volume or cubic contents of the pressed cake is determined after it has been dried. The elastic reacting force on removing the load on the piston, which will naturally be very different with different kinds of material, gave useful information for the recognition of the various paper making materials.

Goes with American Paper Products Co.

CARTEAGE, Ind., June 11, 1923.—J. H. Wilts, formerly with the Thompson & Norris Company of Indiana, Brookville, Ind., has been appointed superintendent of the American Products Company at Carthage, succeeding H. C. Bassler.

TECHNICAL SECTION, PAGE 225

Summer Meeting of Canadian Association

The summer meeting of the Canadian Pulp and Paper Association will be held Thursday and Friday, June 21 and 22. A cordial invitation is extended by the Technical Section to any members of the Technical Association who can find it convenient to attend the meeting.

The following program has been arranged for the meeting:

TUESDAY, JUNE 21

10 A. M.—Members will assemble at the Ritz Carlton Hotel on Sherbrooke Street West, where motor buses will be provided for a trip to Ste. Anne de Bellevue.

11 A. M.—Arrival at Ste. Annes. Inspection of the plant of the Educational and Industrial Press, Ltd. (Home of the Pulp & Paper Magazine, and of the Institute of Domestic and Industrial Arts, under whose direction the Correspondence School in Paper-making is carried on).

12.30 P. M.—Luncheon at the Senneville Country Club as the guests of the Pulp & Paper Magazine.

After luncheon there will be one hour devoted to solid business. The piece de resistance will be an address by J. O. Ross, of the J. O. Ross Engineering Corporation of New York and Montreal on the Briner System for the elimination of moisture from machine room, which is creating so much interest in the industry just at present.

2.30 P. M.—Trip by launch to Beauharnois, Que., where a visit of inspection will be paid to the Howard Smith Paper Mills, Limited, mill at that point, as guests of the company.

5 P. M.—Trip by launch back to Ste. Anne de Bellevue where train will be taken for Montreal.

8 P. M.—Dinner at the Ritz Carlton, Montreal, as the guests of the Canadian Pulp and Paper Association.

FRIDAY, JUNE 22

10 A. M.—Members will assemble at the Ritz Carlton Hotel, where motor buses will be provided to convey them to Lachine, where a visit of inspection will be paid to the Dominion Engineering Works, Ltd.

This company is now constructing a 230-inch news print machine for the Belgo Canadian Paper Company, Limited, and a 234-inch news print machine for the Backus-Brooks Company's new mill at Kenora, Ont., and have other important paper-making and hydraulic machinery in progress.

This visit will provide the first opportunity our members have been afforded of seeing paper machines in the process of manufacture and will undoubtedly prove both interesting and instructive.

Friday afternoon will be left free. There are many sight-seeing opportunities and other pleasurable ways of spending a summer afternoon in Montreal and its environs, details of which will be made available to visitors on arrival.

Cleansing Papermaking Felt

The April number of *Alfelco Facts*, the plant organ of Albany Felt Company, contains in abridged form the address of Prof. George B. Haven, which was given before the Annual Convention.

The research was carried out by Albany Felt Company through the Research Department of Massachusetts Institute of Technology of which Professor Haven has charge, and from whom reprints of the complete technical article may be obtained on request.

The Albany Felt Company will gladly co-operate with paper manufacturers in solving their individual problems and will either furnish a formula for a soap that will cleanse felts quickly and thoroughly without injury to the fabric, or will furnish instructions to those who use commercial materials for controlling the methods of use to ensure the least possible injury in cleansing their felts.

CHEMISTRY OF THE ALKALINE WOOD PULP PROCESS*

I—Aspen, Loblolly Pine, and Jack Pine by the Soda Process

By S. D. WELLS¹, R. H. GRABOW², J. A. STAIDL³, AND M. W. BRAY⁴

In the studies of the United States Forest Service in the pulping of various species of American woods since 1906, the need of intensive chemical studies along with the pulping studies in order to follow the progress of the cook has been felt. The progress of the cook as is shown by yield, consumption of the alkali, and bleachability of the pulps has definitely been established by the work of the Service as reported by H. E. Surface in Bulletin 80 of the United States Department of Agriculture and the work of Sutermeister as indicated in his text book, "Chemistry of Pulp and Paper Making." In the work now under way the studies are carried much further and the progress of the cook reflected by the proportion of cellulose in the pulp, quality of the cellulose, proportion of lignin, pentosan, etc., in the pulp, and wherever practical, in the black liquors. Aspen, loblolly pine, and jack pine were chosen as the species to use. Aspen is the standard hardwood in the soda pulp manufacture, loblolly pine is a typical southern pulpwood and jack pine is probably the most typical northern coniferous wood used in alkaline processes.

The semi-commercial tumbling digester installed at the Forest Products Laboratory having a capacity of 100 pounds of oven dry chips was used for these experiments. In order to avoid irregular results which would have been obtained in the shorter cooks on account of ununiform penetration, the chips were thoroughly impregnated with the cooking liquor before the cooking operation commenced. In order to accomplish this the digester A, Fig. 1, was completely filled with cooking liquor and the cover H bolted in place. The pressure tank I was next filled with the same liquor. By forcing steam into the top of the tank and opening the connections between I and digester A hydrostatic pressure was produced amounting to the steam pressure available which forced the cooking liquor into the chips and at the end of an impregnation period of thirty minutes the chips were found to be thoroughly penetrated. The digester was then revolved so that it was upside down and the valves in the relief pipe L and pipe O were opened so that the excess liquor in the digester was forced back into tank X from which it was originally obtained. By weighing the liquor before and after impregnation and by analyzing the liquor before and after the amount of chemical taken up by the chips was calculated and controlled. After sufficient liquor had been returned to the tank to leave the desired quantity in the digester the connections just referred to above were closed, water added if necessary to give the desired volume in the digester and the cook carried on in the usual manner. The usual procedure used in cooking is outlined in a previous article⁵. The impregnation pressures used in the series discussed amounted to between 100 and 110 pounds per square inch and the temperature of impregnation between 20 and 30° C. with the exception of a very few instances.

The impregnation liquor was brought back to approximately its original volume and concentration after each cook and insofar as the resins and other organic matter dissolved from the wood were concerned had approximately the same degree of saturation throughout the series. In the jack pine series, however, cook No. 836 was

made of fresh liquor, No. 837 with liquor with but a small content of organic matter and No. 838 with liquor not yet saturated but more nearly so than No. 837. The effects of using fresh liquor will be discussed later. The cooking conditions were as follows:

1. Charge of chips—100 pounds bone dry weight.
2. Caustic soda—20 pounds.
3. Volume of cooking liquor at beginning of cook—25 gallons.
4. Time in reaching maximum temperature—one hour.
5. Maximum temperature 170° C. corresponding to a steam pressure of 100 pounds per square inch above atmospheric pressure.

Cooks were made of various lengths varying from one-half to seven hours in duration. By obtaining yields, black liquor samples

TABLE I
BEATING DATA ON JACK PINE
Cooks 848, 850, and 846 old liquor. Cooks 838, 837, and 836 new liquor.

Cook.	Number	Duration of cook, Hours	Pop test		Tearing		Tensile		Folding	
			Time to maximum test, Minutes	Points	Time to maximum test, Minutes	Grams	Time to maximum test, Minutes	Meters	Time to maximum test, Minutes	Number double folds.
848	3	80	81	100	174	120	3,500	80	430	
838	3	120	94	100	160	100	3,800	100	220	
850	4	140	87	140	177	140	3,700	120	390	
837	4	100	97	*	160	80	4,000	*	890	
846	7	100	91	* 100	184	80	4,100	80	530	
836	5	80	96	*	163	60	3,900	40	500	

*Less than 40.

and average samples of the pulp at these various intervals the material was obtained for the chemical studies in order to trace the progress of the cooking action. The black liquor sample was taken immediately before blowing by turning the digester upside down and blowing the black liquor through the relief line and through a condenser to cool it and to prevent evaporation and consequent increase in concentration. The pulp samples were taken from the entire cook after the pulp had been washed, pressed, and shredded to facilitate accurate sampling. The yield determination was made at the same operation.

Analytical Procedure

The following tests were made on the black liquor: Ratio of alkali combined with woody matter to total alkali; lignin content, content of volatile acids, and methoxy content.

LIGNIN

Sufficient concentrated sulphuric acid was added to 5 cc. sample of black liquor to make a 72 per cent acid solution. The mixture was allowed to stand 12 hours. At the end of this time it was diluted with water until the solution had a concentration of 4 per cent sulphuric acid. The solution was then boiled until the precipitate became coagulated. It was then allowed to settle before filtering through a fine porous alundum crucible. The precipitate was washed five or six times with hot water, dried two hours at 105° C. and weighed. This determination is a modification of the Ost and Wilkening⁶ method for lignin determination.

* Cross and Bevan; Researches on Cellulose III, 39 (1905-10).

* Presented at the annual convention of TAPPI.

¹ Assistant in Charge, Section of Pulp and Paper, Forest Products Laboratory, Madison, Wis.

² Assistant Chemist in Forest Products, Forest Products Laboratory, Madison, Wis.

³ Assistant Engineer in Forest Products, Forest Products Laboratory, Madison, Wis.

⁴ Chemist in Forest Products, Forest Products Laboratory, Madison, Wis.

Acknowledgement is made to T. M. Andrews, Associate Chemist in Forest Products, Forest Products Laboratory, Madison, Wis., who did much of the analytical work on the pulps, and L. N. Erickson, Assistant Wood Technologist, Forest Products Laboratory, Madison, Wis., who made the cooks on aspen.

⁵ Equipment and Operation of an Experimental Laboratory by Otto Kress, S. D. Wells and V. P. Edwards, Paper, April 19, 1920.

SODA AND SULPHATE PROCESS—PROJECTS 168-1 AND 168-2

Strength Data

Cooking Data

Table with columns for Shipments, Species, Dates, Weights, Penetration, Yields, Steam, and Strength Data. Rows include species like Jack pine, Aspen, and Loblolly pine.

Temperature 100° C. at beginning of cook. *Steam pressure very low. **Steam pressure very low before impregnation. *Steam pressure very low. **Steam pressure very low before impregnation.

TOTAL VOLATILE ACIDS

A 100 cc. sample of black liquor was pipetted into a 500 cc. distilling flask containing 30 cc. of syrupy phosphoric acid and a few glass beads. A very small piece of paraffine was added to prevent frothing. The distillation was continued until frothing began. One hundred cc. of water was then placed in the dropping funnel fitted into the rubber stopper used to close the flask and allowed to drop in one at a time at such a rate as to prevent frothing. When all of the water was added the distillations were continued until frothing began, when it was stopped.

The distillate was collected in a 250 cc. volumetric flask and made up to volume. A twenty-five cc. sample was titrated with N/10 alkali using phenolphthalein indicator. The results were calculated as acetic acid.

TOTAL SOLIDS

A 25 cc. sample of black liquor was placed in a porcelain dish, and evaporated to dryness in a vacuum oven at a temperature of 105° C. and a vacuum of 15 inches. The dried black liquor after being weighed was ashed at a dull red heat and again weighed. The

loss in weight gave the amount of total solids present in the black liquor. Determination of the Na₂O in the ash gave the basis for figuring the final volume of black liquor at the end of the cook.

BLEACH TESTS

Bleaching tests were run on various pulps according to the standard Laboratory procedure. With the exception of the aspen pulps reported, most of the pulps were difficult to bleach and only one pulp of each series was actually bleached with the amount reported. In the case of the other cooks the sheets obtained with the maximum amount of bleach tried was compared with the sheets obtained with a smaller amount of bleach on the easiest bleaching cook and the theoretical bleach that would be required was figured by direct proportion. While this method has not been thoroughly investigated, it has been found to be fairly accurate within certain limitations and is the only method of obtaining a theoretical bleach requirement for pulps difficult to bleach. While it may not have practical application it is of considerable value in studies of this nature.

MOISTURE, HOT WATER SOLUBLE, AND ALKALI SOLUBLE TESTS

Moisture determinations were made by drying at 105° C. in or-

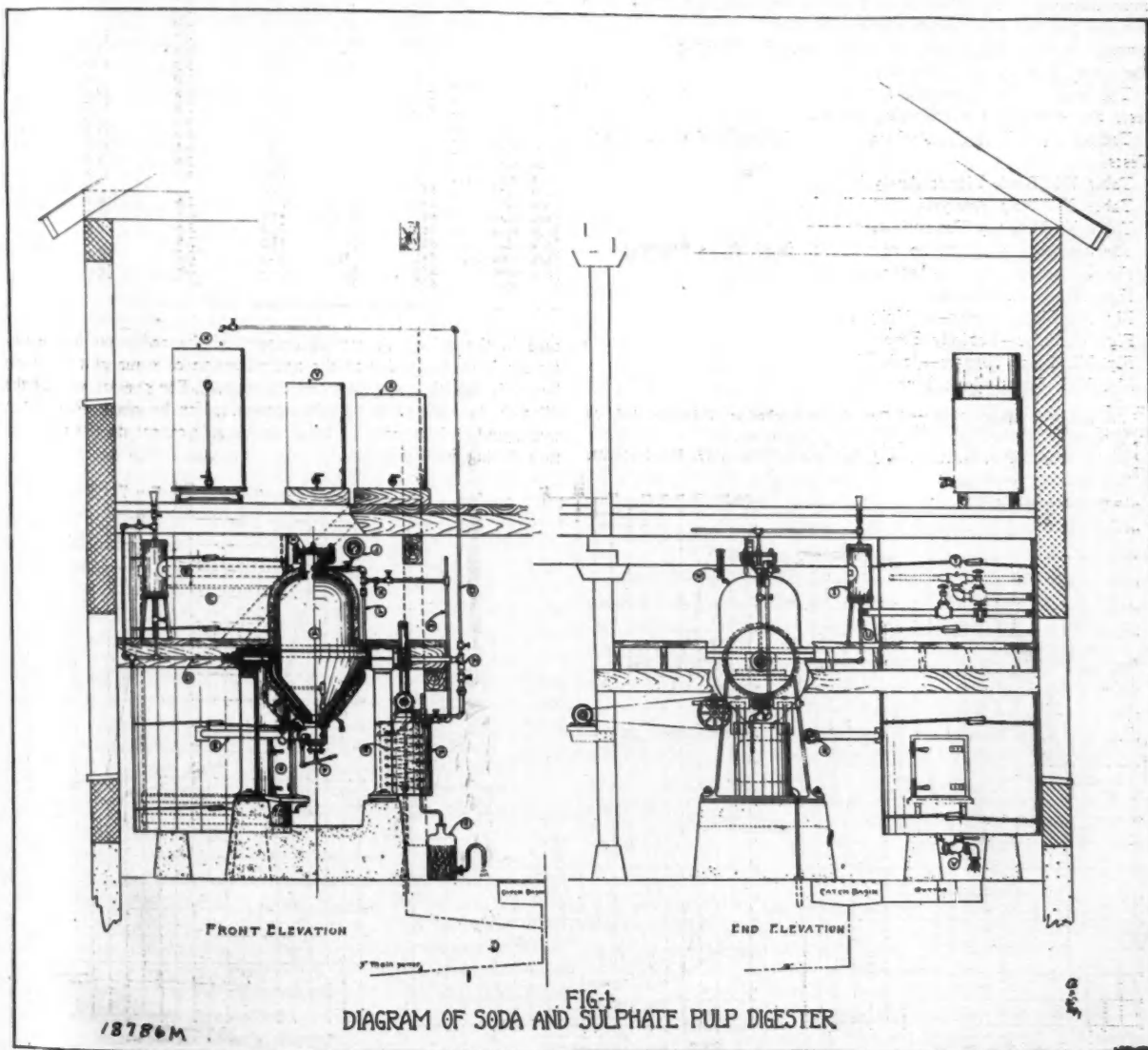


FIG-1
DIAGRAM OF SODA AND SULPHATE PULP DIGESTER

der that all results could be reported on an oven-dry basis. Solubilities in hot water and one per cent alkali solution were obtained by treatment with these reagents for three and one hours, respectively, at 100° C. The solubility in alkali and in water was determined on separate samples. A corrected value for the solubility in alkali was, therefore, obtained by deducting the solubility in water from that in alkali.

Lignin was estimated by a modification of the method of Ost and Wilkening.⁷ The cellulose, pentosans and methoxyl contents of the samples were determined by the methods reported by Schorger.⁸ The purified cellulose was examined for alpha, beta, and gamma-cellulose by the volumetric method of the authors.⁹

BEATING TESTS

Beating tests were made on some of the jack pine pulps using the ball mill method recommended by the Committee on Sulphite Pulp of the Technical Association of the Pulp and Paper Industry. The air-dried hand sheets made from the beaten pulps were tested with the Ashcroft tester, Elmendorf tearing tester, Schopper tensile strength tester, and Schopper folding tester. The results obtained are given in Table I. The time in the ball mill to develop the maximum strength is indicated as well as the test obtained. The units for the pop test are pounds per square inch; for the tearing test, grams; for the tensile test, in meters breaking length; and folds, the actual number of double folds.

The cooking and bleaching data and the results of the chemical tests are given in the following tables:

Table II, (A, B, & C), Cooking Data and Bleaching and Strength Tests.

Table III. Black Liquor Analysis.

Table IV. Pulp Analysis.

Table V. Methoxy Determinations.

The graphical presentation of the data is given as follows:

Fig. II. Black Liquor—Aspen.

Fig. III. Pulps—Aspen.

Fig. IV. Black Liquor—Loblolly Pine.

Fig. V. Pulps—Loblolly Pine.

Fig. VI. Black Liquors—Jack Pine.

Fig. VII. Pulps—Jack Pine.

⁷ Ost and Wilkening, Cross and Bevan's Researches on Cellulose, III, 39 (1906-10); Chemiker Zeitung, 461 (1910).
⁸ A. W. Schorger, J. Ind. & Eng. Chem., 9 (1917), 556.
⁹ M. W. Bray and T. M. Andrews, J. Ind. & Eng. Chem., 15, No. 4 (1923), 877.

Discussion of Results

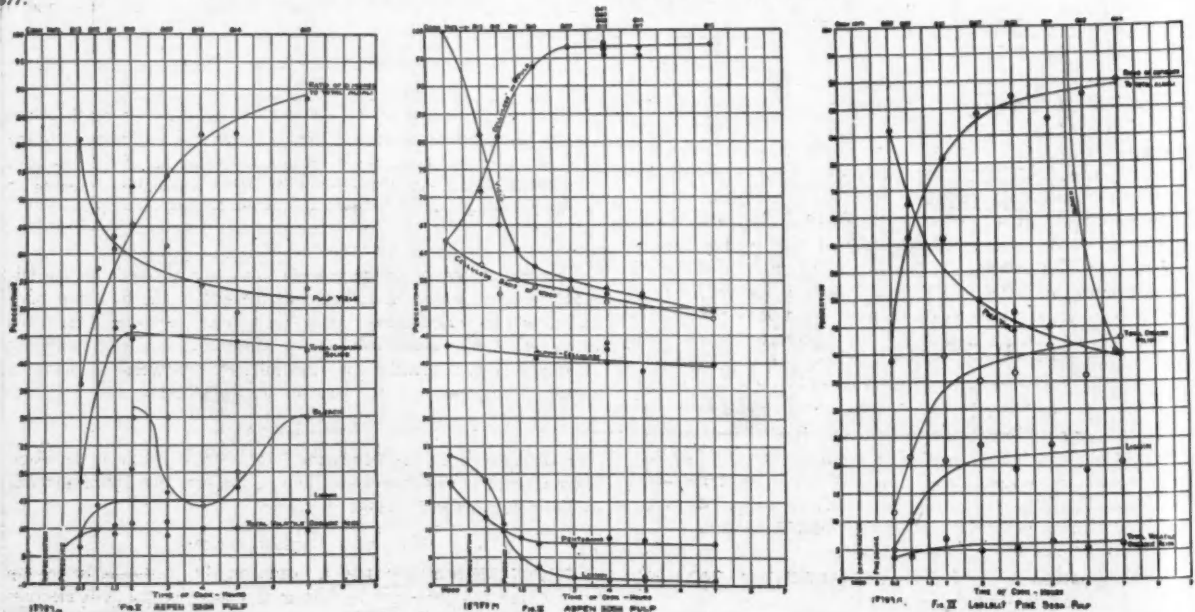
IMPREGNATION DATA

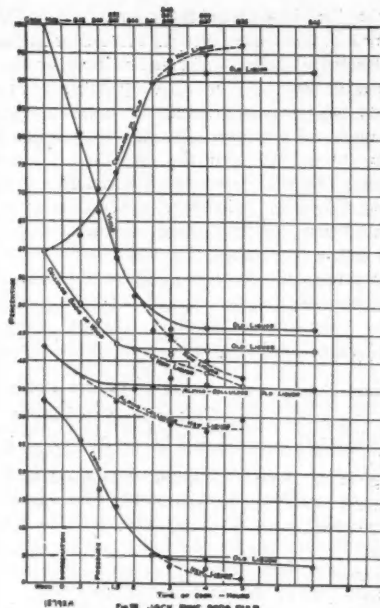
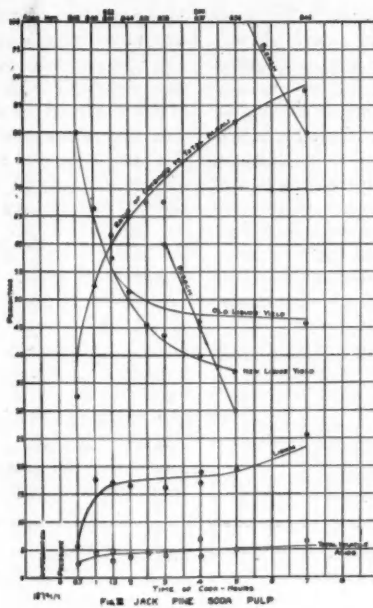
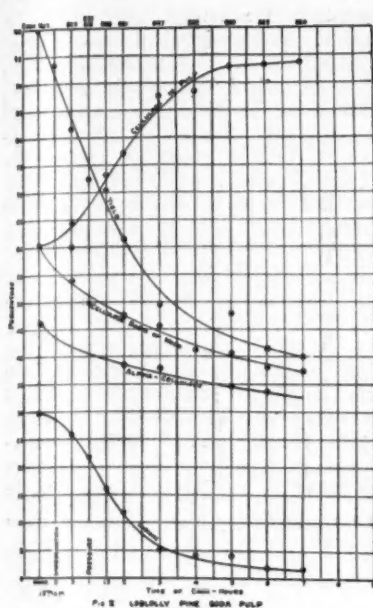
In the impregnation operation the concentration of caustic soda in the liquor was reduced from 10 to 20 grams per liter in most of the cooks. This reduction of concentration is very much greater than can be accounted for by the dilution caused by the mois-

TABLE III
RESULTS OF ANALYSIS ON BLACK LIQUORS

Species	Cook. Number	Time of Cook, Hours	Volume at end of cook, Gallons	Volatile acids, Pounds per 100 pounds chips	Lignin, Pounds per 100 pounds chips	Total organic solids, Per cent of wood.
Aspen	813	1/2	38.2	6.8	3.7	17.1
Aspen	812	1	48.6	7.6	12.5	26.8
Aspen	811	1 1/2	65.6	9.8	11.1	44.6
Aspen	810	2	69.2	9.6	20.6	46.7
Aspen	809	3	56.4	8.8	13.1	18.5
Aspen	816	4	44.7	9.4	...	42.2
Aspen	814	5	53.8	9.9	17.1	43.9
Aspen	815	7	55.3	9.7	12.9	40.7
Loblolly	829	1 1/2	43.3	4.2	4.4	11.5
Loblolly pine.	825	1	39.4	3.8	10.2	21.5
Loblolly pine.	821	2	45.6	7.0	20.8	39.7
Loblolly pine.	827	3	55.0	4.8	23.6	35.4
Loblolly pine.	822	4	52.4	5.6	19.3	36.8
Loblolly pine.	820	5	54.8	6.5	23.6	45.2
Loblolly pine.	823	6	50.4	5.6	19.1	36.1
Loblolly pine.	824	7	48.9	6.1	20.8	43.0
Jack pine	842	1	42.8	2.6	4.0	...
Jack pine	840	1 1/2	66.2	4.6	17.4	...
Jack pine	852	1 1/2	55.9	...	...	...
Jack pine	844	2	37.2	3.8	16.4	...
Jack pine	861	2 1/2	46.5	4.5	27.2	...
Jack pine	850	4	39.8	3.6	19.4	...
Jack pine	845	5	44.5	5.8	...	...
Jack pine	841	3 1/2	...	3.2	9.4	...
Jack pine	838	3	...	3.9	16.0	...
Jack pine	836	5	...	4.7	19.5	...

ture in the chips. A certain amount of the reduction in concentration is probably due to the neutralization of some of the caustic by easily soluble constituents of the wood. The greater part of the dilution, however, can only be accounted for by absorption and it was found to be dependent to a considerable extent on the temperature during impregnation.





YIELD, BLEACH AND BEATING TESTS

In the case of aspen the progress of the cook as reflected by the yield was very rapid at first amounting to a reduction of 18 per cent of the wood substance by the end of the first half hour or by the time when the cook had only reached a temperature in the neighborhood of 100° C. At the end of two hours 42 per cent had been reduced or 84 per cent of the total reduction at the end of seven hours. In the cases of loblolly and jack pines the action is even more rapid with the yields approaching a final value of about 20 per cent lower than the yield obtained with aspen under the same cooking conditions. The curves showing the consumption of active alkali during the cooks are in general the opposite of the yield curves. The rate of alkali consumption in the early stage of the cook is less than the rate of reduction in yield. In the latter part of the cook the situation is reversed. At the end of seven hours in all three cases, about 90 per cent of the active alkali was consumed which is about as great as is possible under practical cooking conditions. The shapes of the two sets of curves would tend to show that the components of the wood readily dissolved by alkali are complex and of high molecular weight while the components combining towards the end of the cook are simpler and of lower molecular weight. Some of the alkali in the later stages of the cook however, is probably utilized for further resolution of the more complex constituents dissolved earlier.

In the case of aspen the pulps which bleached the most readily were obtained at the end of the fourth hour and further cooking seemed to cause a dyeing of the pulp from the action of the black liquor in contact with the pulp after it had been isolated. Whenever two cooks were made under the same conditions except concentration of the cooking liquor the cooks with the more dilute liquors bleached the easier. In the case of jack pine the pulps were much more difficult to bleach and the more drastic cooks gave the more readily bleachable pulps. In the case of cook 836 on Jack pine in which fresh impregnation liquor was used, a very marked reduction in the bleach consumption is noted due to the fact that by the solution of woody matter from the chips and removal of the same from the digester, leaving the specified amount of alkali, the effect of cooking with more alkali was obtained. Also a considerable amount of wood substance capable of forming color compounds was probably removed from the digester and the bleachability of the pulps accordingly improved.

A study of the beating tests on jack pine as indicated in Table I, would suggest the following conclusions. The pop test is brought out by drastic and thorough cooking using excess of chemical and the beating necessary to bring out maximum test is considerably reduced. The tearing qualities are developed by long cooking with the minimum amount of chemical necessary to produce thorough disintegration. Tensile strength is affected the same as the pop test. The resistance of the pulps to folding is developed by long cooking with the minimum amount of chemical to produce thorough disintegration. Drastic cooking with excess of alkali makes the pulp develop its folding properties so rapidly on beating that by the time the stock is properly prepared for forming a sheet the folding test has reached a maximum and fallen below normal requirements. Probably the best conditions for preparing jack pine soda pulps of maximum folding properties would be a cook of six hours duration using 20½ pounds caustic soda per 100 pounds dry chips and a temperature of 170° C.

Black Liquor Tests

LIGNIN

With the three woods the amount of lignin in the black liquor reached a maximum of 20 per cent at the end of two hours. In the case of aspen further cooking seemed to reduce it. In the case of loblolly and jack pine the amount of lignin gradually increased to in the neighborhood of 25 per cent at the end of seven hours.

VOLATILE ACIDS

The greater portion of the volatile acids such as acetic and formic acids appeared in the black liquor at the end of the first half hour and slowly increased from then to the end of the cook. The much higher yield of volatile acids from aspen in comparison with the pines agrees very closely with the difference between in yields of acetate from aspen and the pines in wood distillation.

TOTAL SOLIDS

In the case of all the woods the total organic solids in the black liquors attain a maximum at the end of the first two hours and fail to show any marked change thereafter.

METHOXYL DETERMINATIONS

Methoxyl determinations were made on the jack pine series by S. S. Aiyar and presented by him in the paper at the Fall meeting

of the American Chemical Society, 1922, at Pittsburgh.¹⁰ The summary of results are given in Table 5 as mentioned earlier. It was the partially cooked wood and pulp progressively decreased and at the same time increased in the black liquors so that the total accounted for remained practically constant. The rate of removal of the methoxyl was approximately the same as that of the lignin and seems to indicate that the methoxyl is associated only with the lignin. The volatile methoxyl derivatives in the black liquor were found, however, to increase to a maximum at the end of one and a half hours and from there on decreased until at the end of four hours they were about the same as at the end of the first hour. This would indicate that as the cook progressed the volatile methoxy compounds recombined to form stable non-volatile compounds. The results obtained from the five and seven hour cooks were irregular and need confirmation in some later series.

Analyses of the Pulps

CELLULOSE AND LIGNIN

The cellulose curves in Figures 3, 5 and 7 indicate the occurrence

¹⁰ A Study of the Distribution of Methoxyl in the Products of Different Treatments of Wood, Part II. Soda Cooks on Jack Pine.

of a rapid loss of cellulose during the first two hours of the cook which decreases in rate as the cook progresses. In the case of aspen and loblolly pine the rate of loss is considerable, however, throughout the cook and in the case of jack pine the cook seems to reach a point of equilibrium at the end of two hours. Where fresh liquor was used for impregnation, however, the effect of cooking with a larger amount of chemical is obtained and the rate of loss continues to the last point at the end of five hours. The rapid rate at the beginning of the cooks would seem to discourage any attempts to obtain a higher yield of high quality pulp using the soda process. The rate of loss of alpha or resistant cellulose is also much greater at the beginning of the cook especially in the case of coniferous woods. The rate, however, more rapidly approaches a constant. In the case of lignin the loss in the beginning of the cooks seems to be slower than it is later and the rate reaches a maximum at about the point maximum pressure is reached. From then on the rate of lignin loss rapidly decreases and at the end of four hours equilibrium seems to have been reached. The curves indicate that the ratio of the loss of lignin to the loss of cellulose during the latter part of the cook is much greater than has been commonly supposed. During the first half hour of the cook the

TABLE IV-A—ANALYTICAL DATA ON ASPEN SERIES
RESULTS CALCULATED ON BASIS OF OVEN-DRY WOOD EXCEPT LAST COLUMN

Pulp sample No.	Cook. No.	Time of cook, Hours	Yield of pulp oven dry %	Solubility in hot water %	Solubility in 1% alkali corrected %	Lignin %	Cellulose %	Alpha cellulose %	Beta cellulose %	Gamma cellulose %	Pentosan %	Methyl pectosan %	Cellulose lost		Lignin lost		Ratio B/A	Cellulose in pulp %
													A %	B %	A %	B %		
854-A & B	0		100	3.5	16.9	23.4	62.1	43.2	9.3	9.1	18.7	0.1	62.1	
13	813	1/2	51.5	4.7	2.3	18.9	37.0	37.3	14.3	3.0	13.0	0.0	4.3	4.5	1.0	71.0		
12	812	1	65.0	1.0	2.0	10.9	52.6	35.1	15.5	2.0	9.8	0.0	9.5	12.6	1.3	80.9		
11	811	1 1/2	60.5	0.4	1.0	4.8	55.0	52.2	5.2	2.4	8.5	0.0	7.1	18.6	2.7	91.8		
10	810	2	57.5	0.0	1.7	3.2	53.6	40.8	9.8	2.5	7.4	0.0	8.5	20.2	2.4	83.3		
9	809	3	55.0	0.0	1.2	1.4	53.3	41.4	10.0	1.5	7.2	0.0	8.8	22.1	2.5	97.0		
8	808	4	52.5	0.0	1.0	0.9	51.0	40.0	9.2	1.5	8.2	0.0	11.1	22.5	2.0	97.1		
17*	816	4	53.2	0.2	1.4	0.8	51.2	4.0	8.7	2.0	8.5	0.0	11.0	22.6	2.0	95.5		
94*	847	4	42.3	0.2	0.1	1.2	41.2	34.3	4.7	0.8	....	....	20.9	22.2	1.1	97.4
116	860	4	43.5	0.2	0.4	1.1	42.0	36.4	2.5	3.7	....	....	20.1	22.3	0.9	96.3
36	817	5	52.5	0.3	1.3	1.5	50.0	38.4	8.9	3.2	....	....	12.1	22.0	1.8	95.3
14	814	5	52.0	0.1	1.1	0.8	50.4	37.0	10.9	2.7	8.0	0.0	11.7	22.6	1.9	96.9		
70*	830	5	50.4	0.6	0.5	0.8	48.3	28.6	16.3	3.1	....	....	13.9	22.6	1.6	95.7
15	815	7	49.4	0.0	1.1	0.7	48.0	39.7	5.8	1.8	7.3	0.0	14.1	22.7	1.6	97.4		

*Not impregnated with liquor previous to cooking.

TABLE IV-B—ANALYTICAL DATA ON LOBLOLLY PINE SERIES
RESULTS CALCULATED ON BASIS OF OVEN-DRY WOOD EXCEPT LAST TWO COLUMNS

Cook Number	Time of cooking Hours	Yield of pulp oven dry %	Solubility in hot water %	Solubility in 1% alkali corrected %	Lignin %	Cellulose %	Alpha cellulose %	Beta cellulose %	Gamma cellulose %	Cellulose lost A %	Lignin lost B %	Ratio B/A	Cellulose in pulp %
Wood	0	100	2.7	10.0	29.7	60.5	24.2	22.2	13.2	0	0	0	60.5
829	1/2	81.4	3.5	2.2	25.2	52.4	....	....	....	8.1	4.5	0.56	64.4
831	1	72.3	2.1	1.9	20.8	47.6	22.7	....	....	12.9	8.9	0.69	65.9
828	1 1/2	70.3	1.7	2.2	16.6	51.4	....	....	....	9.1	13.1	1.44	73.1
821	2	61.2	1.2	1.7	12.2	47.2	....	....	....	13.3	17.5	1.32	77.1
827	3	49.4	0.3	1.2	5.3	43.2	25.8	12.8	4.6	17.3	24.4	1.41	87.5
822	4	49.0	0.5	1.1	4.7	43.2	28.6	9.3	5.1	17.3	25.0	1.44	88.0
820	5	47.8	0.0	0.7	4.4	44.4	34.3	5.2	5.4	16.1	25.3	1.57	92.8
823	5	41.5	0.2	0.7	1.9	38.2	25.6	9.1	3.6	22.3	27.8	1.25	93.1
824	7	39.9	0.2	0.5	1.6	37.4	25.6	8.2	3.5	23.1	28.1	1.22	93.6

TABLE IV-C—ANALYTICAL DATA ON JACK PINE SERIES. RESULTS CALCULATED ON BASIS OF OVEN-DRY WOOD EXCEPT LAST TWO COLUMNS

Pulp sample Number	Cook No.	Time of cooking Hrs.	Yield pulp oven dry %	Solubility in hot water %	Solubility in 1% alkali corrected %	Lignin %	Cellulose %	Alpha cellulose %	Beta cellulose %	Gamma cellulose %	Cellulose lost A %	Lignin lost B %	Ratio B/A	Cellulose in pulp %	Methoxyl in pulp %
Old Liquor															
86	Wood	0	100	4.8	10.7	32.8	59.8	42.6	0.0	14.8	0	0	0	59.8	4.8
81	842	1/2	80.7	1.6	3.2	25.6	50.4	16.5	22.6	10.8	9.4	7.2	0.8	62.5	4.7
82	840	1	66.5	1.2	1.9	16.7	47.2	....	10.9	9.1	12.6	16.1	1.3	70.9	4.0
83	841	1 1/2	58.4	1.0	2.4	14.0	43.0	32.6	2.9	5.4	16.8	18.9	1.1	73.6	3.5
84	844	2	51.6	0.8	1.2	9.0	42.0	35.1	1.1	4.3	17.7	23.8	1.3	81.5	2.7
117	861	2 1/2	45.5	0.3	0.9	5.1	40.8	35.3	0.8	5.5	18.8	27.7	1.5	69.6	....
90	850	4	46.0	0.3	0.5	4.6	42.0	35.7	0.7	4.9	17.7	28.2	1.6	91.5	1.5
88	846	7	45.9	0.2	1.0	3.2	42.2	35.1	1.2	5.1	17.6	29.6	1.7	91.9	1.2
New Liquor															
84	844	2	51.6	0.8	1.2	9.0	42.0	35.1	1.1	4.3	17.7	23.8	1.3	81.5	2.7
79	838	3	43.8	0.4	0.5	3.2	41.0	28.5	6.3	5.8	18.8	28.6	1.5	93.7	....
92	851	3	44.6	0.0	0.5	4.7	41.2	....	....	....	18.6	28.1	1.5	92.3	1.6
78	837	4	39.9	0.2	0.4	2.6	37.8	27.4	5.6	4.9	22.0	30.2	1.4	94.8	....
80	836	5	37.0	0.2	0.5	1.0	35.6	29.7	2.5	2.4	24.2	31.8	1.3	96.4	2.0

rate of loss of cellulose is as great as the loss of lignin. It would indicate, however, that the cellulose as determined is not homogeneous and the loss consists of the less resistant, loosely combined, and easily hydrolyzed portions. It is doubtful whether in pulp of the best quality it is desirable to retain them.

PENTOSANS

Pentosans were only run in the aspen series. A study of the curve would indicate that the pentosan content of the aspen wood is probably made up of two groups, one of which is very easily hydrolyzed by the alkali and the other group which is extremely resistant and is able to withstand not only the alkali treatment but also the chlorination treatment of the Cross and Bevan method for determining cellulose. In fact, a comparison of the yield curves and

TABLE V.—METHOXYL DETERMINATIONS ON JACK PINE SERIES

Time of cooking Hours	Methoxyl found in pulp Pounds	Methoxyl found in black liquor Pounds	Volatile methoxyl found in black liquor Pounds	Total methoxyl accounted for Pounds	Ratio	Ratio
					methoxyl in pulp to methoxyl in wood Per cent	lignin in pulp to lignin in wood Per cent
Wood	4.84			4.84	100	100
$\frac{1}{2}$	3.78	1.12	0.99	4.90	78	80
$1\frac{1}{2}$	2.02	3.03	1.72	5.05	42	44
2	1.41	3.59	1.68	5.00	29	28
3	0.73	3.85	1.39	4.58	15	15
4	0.71	3.81	1.14	4.52	14	14
5	0.73	6.21	2.08	8.29	15	14
7	0.53	5.16	0.18	5.34	11	14

the cellulose curves would indicate that the increased yield of pulp and cellulose in the case of aspen over those obtained from the coniferous woods is probably made up of the pentosans.

ALPHA AND GAMMA CELLULOSE

The alpha-cellulose curves have already been discussed. In the case of gamma-cellulose the data would indicate that it is very rapidly attacked during the cooking process and has almost been completely removed by the end of the first hour. Beta-cellulose tests have not been plotted since later work has demonstrated that under very careful and closely controlled chlorination beta-cellulose is not found in either sound wood or pulps prepared therefrom under the conditions outlined.

SOLUBILITY IN WATER AND ALKALI

The rapid decrease in the amount of water and alkali soluble in the pulps is what would be expected on account of the solvent action of the cooking process.

Summary

1. All cooks in the series were made with preliminary impregnation because it has been established that it gives a more uniform cook with better quality pulp than cooking without it.
2. Approximately 90 per cent of the cooking occurs in the first two hours.
3. The loss of wood substance is caused not only by the removal of the lignin and cellulose through prolonged cooking but also the removal of the cellulose at the beginning of the cook. The cellulose is then removed as fast as the lignin and it is only in the middle portion of the cook that the lignin removal is more rapid than the cellulose.
4. The constituents of wood forming acetic, formic and other volatile acids are very easily hydrolyzed and the major portions are removed even before the digester has reached pressure.
5. The point of maximum bleachability may be passed in cooking and further cooking seems to dye the fiber and increase the bleach requirements. The extraction and removal of alkali soluble material in the case of one of the series greatly increases the ease of bleaching.
6. The conversion of volatile to non-volatile methoxyl compounds during the latter part of the cook would suggest their removal by means of relief during the first part of the cook if their recovery is contemplated.

Confer on Dumping of Kraft Paper

[FROM OUR REGULAR CORRESPONDENT.]

WASHINGTON, D. C., June 13, 1923.—A conference was held here last Friday before Judge McKenzie Moss, Assistant Secretary of the Treasury in charge of customs in connection with the alleged dumping of Kraft wrapping paper on the American market from Norway.

The conference was attended by representatives of the Norwegian Government, American importers, American wrapping paper manufacturers, and experts of the Custom Service. Statistics were cited tending to show that the importation of Norwegian kraft paper into this country are very small in comparison with the amount of such paper consumed in this country. George Davis, who represented Wilkinson Brothers & Co., importers of New York City, and a former official of the Custom Service, presented the importers' side of the question.

In connection with the finding of the government experts that Norwegian kraft paper is sold cheaper in the United States than it is in Norway, Mr. Davis called attention to the fact that 90 per cent of the kraft paper manufactured in Norway is exported, and only 10 per cent used for domestic consumption. In other words, the exported paper is sold in much larger quantities and therefore can be disposed of at cheaper prices than at home.

Both the importers and the American wrapping paper manufacturers asked and were granted time in which to file briefs. Among those attending the conference were: M. S. Flint, of the Brown Company, Portland, Me.; George T. Keyes, of East Pepperell, Mass.; Warren B. Bullock, representing the American Paper and Pulp Association; G. M. Wetmore, of the Claremont Paper Company, Claremont, N. H.; E. T. Wilkinson, Wilkinson Brothers & Co., of New York; E. C. Melby, New York, and E. Lundh, commercial attache of Norway.

Columbia River Paper Mills to Elect Officers

VANCOUVER, Wash., June 4, 1923.—Stockholders of the Columbia River Paper Mills Company which is building a paper plant in Vancouver, will elect directors June 26. F. W. Leadbetter, president, is in Europe, but will return for the meeting.

The buildings for the sawmill unit are under construction. The piling foundation and deck for the sawmill are complete. The concrete foundation for three 120-foot acid towers for the sulphite plant is being laid and work probably will be started on the sulphite building soon. The sulphite and paper machinery has already been ordered. The sawmill will be finished about September 1. Its capacity will be 130,000 to 150,000 feet every eight hours.

Shipments of Pulp and Paper from Sweden

[FROM OUR REGULAR CORRESPONDENT.]

WASHINGTON, D. C., June 13, 1923.—A report has been received by the Department of Commerce from Assistant Trade Commissioner Sorenson at Copenhagen regarding Swedish foreign trade which states that the aggregate of pulp exports last year was 1,170,000 tons as compared with 540,000 tons during 1921. The total exports of news print paper last year were 131,697 tons, as against 111,527 tons during 1921, and shipments of other paper during last year totalled 131,737 tons, as compared with 63,098 tons during 1921.

Great Activity in Timber Cruising

OLD TOWN, Me., June 11, 1923.—James W. Sewall reports great activity in timber cruising. Mr. Sewall has crews engaged in work, not only in Maine but in Ontario, Quebec, Nova Scotia, Vermont and New Hampshire. So far this year his cruisers have reported on over a million acres of land, and have work laid out ahead for nearly a million acres more.

CURRENT PAPER TRADE LITERATURE

Abstracts of Articles and Notes of Papermaking Inventions Compiled by the Committee on Abstracts of Literature of the Technical Association of the Pulp and Paper Industry

Bleaching

Determination of the Bleach Requirement of Pulp. Bjarne Johnsen and John L. Parsons. *Zellstoff u. Papier* 2, No. 11, 258 (1922); *Pulp and Paper* 21, 53-55 (Jan. 18, 1923).—The authors put forward the following method: Disintegrate 10. g. of pulp (bone dry basis) in a small amount of water in a 500-cc. wide-mouthed glass-stoppered flask, add sufficient water to make a total of 225 cc. (including that present in the pulp), warm to 25° C. in a water bath, add 25 cc. of normal potassium permanganate solution, stir, allow to stand for one hour at 25° C. with frequent stirring, close the flask, stir vigorously, remove about 100 cc. of solution, pipette off a 10-cc. aliquot from this into an erlenmeyer containing 10 cc. of decinormal oxalic acid diluted in about 100 cc. of warm water and acidified with sulphuric acid, and titrate with decinormal permanganate. The number of cc. required is called the permanganate number. The method was compared with Sieber's "chlorine consumption number" (*Pulp & Paper* 19, 866 [1921]; 20, 438, 654, 956 [1922]; *Paper Trade J.* 74, No. 21, 60 [May 25, 1922]; 75, No. 6, 54 [Aug. 10, 1922]; No. 19, 55 [Nov. 9, 1922]), with Tingle's "chlorine factor" (*Pulp & Paper* 20, 480 [June 8, 1922]; *Paper Trade J.* 74, No. 24, 51 [June 15, 1922]), and with a so-called "standard method" of determining the amount of chlorine required to obtain a pulp of the same color as the usual bleached and dried commercial pulps. A factor was worked out for each pulp for converting each of the respective "numbers" to "standard" bleach consumption. The "chlorine consumption number" and "permanganate number" were found to increase fairly regularly with increase in bleach consumption, while the "chlorine factor" of various easy bleaching pulps was practically constant, while hard pulps had a constant factor different from that of the easy bleaching samples. Sieber's and Johnsen's methods are considered valuable for works' control, provided due consideration is given to the conditions in the particular mill in which they are used and the proper factor is worked out for the grade of pulp manufactured. Tingle's method is considered promising for scientific investigations.—A. P.-C.

The Determination of Available Chlorine in Bleaching Solutions. F. Dienert and F. Wandenbulcke. *Ann. fals.* 15, 338-339 (Sept.-Oct. 1922); *Pulp & Paper* 21, 11 (Jan. 4, 1923); 20, 2047 (Dec. 28, 1922); *Paper Trade J.* 75, No. 25, 58 (Dec. 21, 1922).—A. P.-C.

Preparation of Bleach Liquor. J. H. MacMahon assignor to Mathieson Alkali Works. U. S. A. patent 1,426,752, Aug. 22, 1922; Can. patent 228,059, Jan. 16, 1923. See article by MacMahon in *Paper Mill* 45, No. 47, 6 (Dec. 2, 1922); *Paper Trade J.* 76, No. 1, 60 (Jan. 4, 1923).—A. P.-C.

Preparation of Bleaching Powder Solutions. J. H. MacMahon assignor to Mathieson Alkali Works. Can. patent 228,060, Jan. 16, 1923. Bleaching powder is mixed with water in about the usual proportions, and without waiting for the solution to settle chlorine is passed through until practically all of the free lime has been acted upon. It is claimed that the resulting solution is quite stable and is more active than ordinary bleach liquor. There remains very little sludge and what does remain settles very rapidly.—A. P.-C.

Process of Bleaching. G. Ornstein assignor to Electro Bleaching Gas Co. Can. patents 226,826, 226,827, 226,828, Dec. 5, 1922.

No. 226,826. The bleaching is accomplished by means of a solution of chlorine in water of such dilution that practically all the chlorine (95-100%) is hydrolyzed to hydrochloric and hypochlorous acids.

No. 226,827. Sufficient base is added to neutralize the hydrochloric acid produced by the hydrolysis of the chlorine; and during bleaching sufficient base is added to neutralize the hydrochloric acid produced by the reduction of the hypochlorous to hydrochloric acid.

No. 226,828. Chlorine is absorbed in water. One molecule of sodium carbonate is added per molecule of chlorine (Cl₂) to convert the hydrochloric acid into chloride and form sodium bicarbonate, without affecting the hypochlorous acid. The dilution must be such as to give practically complete hydrolysis. The liquor should be used practically as soon as prepared.—A. P.-C.

Sizing

Sizing of Paper. George Muth. Ger. patent 369,058. *Papierfabr.* 2 1,116 (Feb. 25, 1923).—Saponifiable fats and oils are used.—J. L. P.

Sizing of Paper. H. Th. Bohme. Ger. patent 364,000. *Wochbl. Papierfabr.* 54, 617 (Mar. 3, 1923).—A colloidal solution of crude montan wax, prepared by treatment with alkali according to Ger. patent 350,622, is used.—J. L. P.

Sizing and Waterproofing. Carl Jager. Ger. patent 364,564. *Wochbl. Papierfabr.* 54, 907 (Mar. 31, 1923).—Insoluble naphthenates are produced in the beater.—J. L. P.

Use of Rubber in the Manufacture of Paper. Raymond Fournier. *Papier* 25, 544-547 (Dec., 1922). Brief discussion of Kaye's patent. (Compare *Pulp & Paper* 20, 699, Aug. 17, 1922; 20, 500, Dec. 28, 1922. *Paper Trade J.* 75, No. 4, 53, July 27, 1922).—A. P.-C.

Rubber Latex in Paper. Merle B. Shaw and George W. Bicking. *Paper Trade J.* 75, No. 26, 53-55 (Dec. 28, 1922).—After briefly summing up the invention and statements made by Kaye in subsequent publications (see *Pulp & Paper* 20, 699, 2050, 1922; *Paper Trade J.* 75, No. 4, 54, July 27, 1922), the authors describe tests carried out on a semi-commercial scale on book, wrapping and writing paper, which show that there seems to be a slight increase of bursting strength on book paper, but that the variation of the other strength qualities seems to be within that of testing different runs.—A. P.-C.

American Tests on the Use of Rubber Latex in Paper Making. Frederick Kaye. *Paper Trade J.*, 76, No. 9, 55 (March 1, 1923); *Paper Mill* 47, No. 10, 32 (March 10, 1923). The inventor takes exception to the results of tests published by Shaw and Bicking of the U. S. Bureau of Standards (*Paper Trade J.* 75, No. 26, 53-55, Dec. 28, 1922) on the ground that the results show conclusively that the latex used was deteriorated.—A. P.-C.

Application of Rubber Latex to Paper Making. Frederick Kaye. *Paper Ind.* 4, 1407, 1409, 1411, 1413 (Jan., 1923). A general outline of the possibilities of the author's invention. (See *Pulp and Paper* 20, 699 (Aug. 17, 1922); *Paper Trade J.* 75, No. 4, 53 (July 27, 1922).—A. P.-C.

The Colloid Chemistry of Paper Sizing. Rudolph Lorenz. *Wochbl. Papierfabr.* 53, 4542 (1922); *Pulp and Paper* 21, 191-192 (Feb. 15, 1923). The author reviews the action of sulphate of alumina in rosin sizing, and suggests that it acts as an "electrostatic adhesive" which neutralizes the negative charges of the cellulose and rosin, thus preventing the natural repulsion of substances having like charges. He states that it is now possible to size with colloidal rosin prepared by Plauson's process (Frylander, *Pulp and Paper* 19, 908, 1921), which is purely mechanical, there being no previous cooking with alkali; but he gives no details as to the new process.—A. P.-C.

Section of the

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PROFIT AND LOSS METERS FOR STEAM PLANTS

BY STERRY HUNT CHIDS, B. S. CHEM. ENG.*

The two preceding articles of this series¹ have given glimpses of the situation existing in more or less typical steam plants. The first article covered the general theory underlying executive control over steam costs, and the second presented snapshots of conditions as they actually exist. These pictures should be of value, first as a survey of the situation, and second as a basis for possible improvement.

The next step is to provide for taking a continuous moving picture of steam costs, in order to secure the material for constant improvement in routine operation. This, of course, also implies a prompt check when the human or mechanical controls get out of good working order.

The examples which follow have purposely been made in considerable detail, so that you may, if you desire, go quite extensively into this matter of cost control. In going over these figures, however, we especially urge you to keep two points in mind, no matter how much or little detail you desire in your own plant. The first of these is the fact that surprisingly little clerical labor is involved even with a complete analysis, the complications being almost wholly matters of theory and interpretation. The second is that you should try to translate the examples given into the particular matters which are of importance to you, as it is unfortunate either to pass up a good thing because it is presented more elaborately than you need for your own purposes, or on the other hand to become overloaded with a lot of refinements because you do not wish to miss anything that someone else may have. These suggestions are worth keeping in mind in their application to all cost accounting, as you will readily appreciate when you consider that one reason why so many people have elementary and inadequate cost systems is that they know many other people who have cost systems involving too many unimportant details.

Cost accounting is a much bigger and deeper subject than it is ordinarily assumed to be. To the average layman cost accounting is a variety of juggled bookkeeping involving innumerable forms, and its chief purpose is to enable one to set selling price above cost. This definition is very inadequate, however, as may be judged from the fact that we have been able to put together enough material for three articles on simply one of the many factory departments, without discussing either forms or the costs of individual products. In the paper industry particularly, cost accounting demonstrates its usefulness in maintaining the profits through control of operating expenses, and through the proper

production and purchasing policies in the fluctuating business cycles that are so important in the life of a paper mill. Costs versus selling prices are always matters of interest, sometimes of importance, but they are of help to net profits chiefly through the elimination of unprofitable grades and as a guide in the establishment of policies for expansion or contraction over a considerable period of time.

Analyzing the Dollar of Expense

Each dollar that comes out of the bank and goes into operating expense in a paper mill, does so because of many separate applications of executive judgment, on matters varying from general policies down to immediate needs. In so far as the cost accountant can analyze each dollar into the more important of these objectives, he can also present the actual results in such form as will aid the executive in future decisions. The most comprehensive example of this, of course, is a complete budget of operations for a year or more to come.

Analyzed in this way, it is evident that when coal is used in a steam plant, for example, the money it represents may often be usefully divided into three parts; first, that amount for which you get a real return; second, the extra amount which you spend because of wasteful usage; and third, the amount which you pay as a penalty for not operating to capacity. In other words, you must spend something to make steam under efficient conditions; but be up the stack as unabsorbed heat, and you can lose money on unproductive capacity (i.e., if it takes one pound of coal to make ten pounds of steam when running full, it may take 1½ pounds of coal to give ten pounds of steam when running below capacity). Labor, interest, depreciation, and such charges are, of course, an even better example of the last case, as they tend to remain constant regardless of output, which is not true in the case of coal.

In passing it may be of interest to note that part of your coal dollar may have been lost before the coal reached the boilers, if you purchased it on a long-time contract and paid more than it could have been bought for on current delivery. This, however, is a purchasing loss, which should have nothing to do with steam costs; we simply mention it here as a further example of the points developed by this type of cost analysis.

The usefulness of such an analysis is very great. When you get so many thousands of pounds of steam, the difference between what it actually does cost and what it ought to cost under reasonably efficient conditions, is a matter of direct interest to the mill manager. The effect of variations in the percentage of ca-

¹Paper Trade Journal, March 29, 1923, p. 55; and May 17, p. 52.

*With Scovell, Wellington & Co., Engineers and Accountants, N. Y.

capacity at which you may operate is likewise of particular importance, in that losses which arise from this cause are not a charge to departments which do use steam, or to the product going through such departments. Such losses should go against the orders you need, and not against the ones you have.

Standards Are Foundation of Cost Control

To produce these results in a practically automatic way, without having to make analyses of actual costs every month, is most essential from the executive viewpoint, and wholly possible. Contrary to popular belief, it is just as easy to set up standards for judgment before an event happens as it is afterwards, provided they are set up on a scientific basis, and from data as numerous as those available at the time any actual performance is judged. These provisions are not hard to meet except in the case of a brand-new enterprise and even then the attempt has been found to be worth while. Having developed standards for many different industries and varying conditions in individual plants, we have found that pre-determined standards are more accurate and reliable than those set up in explanation of events after they have happened, for human nature is inclined to be somewhat lenient as to its own past responsibilities.

As a foundation for cost control, it is therefore necessary to set up standards for both steam generation and steam consumption. Unless there be such a thing as a perfectly balanced and operated paper mill, these two standards will not correspond in the total amount of steam required, for they are just as independent as in the case of a central station which sells steam to consumers.

Standards for Steam Generation

First of all, we may look upon the steam plant as an independent unit which is fitted for certain steam-producing work and has problems all its own. It has a certain most effective capacity of operation day in and day out, which will give the most economical cost with maximum service. This condition may be established as our standard of operation for the steam plant. The cost of each element of expense to run the plant under this preferred condition is then to be determined. As this condition is usually fairly close to actual operating conditions as regards capacity, at least when the mill is busy, it is not difficult to determine what the various elements of expense are actually going to amount to. The extent to which items like labor and supplies, repairs, etc., are estimated below the actual results previously obtained, is a matter of practical judgment on the part of the manager, plus the dictates of proper practice known to engineers as applying in a plant of the particular character considered. The amount of coal to be burned is naturally a direct resultant of the efficiency set, the quality of coal, pressures, temperature of feed water, etc., and due attention should be given to the effect of reduced coal consumption on labor and other expenses.

Incidentally, however, one should not lose sight of the fact that although standards of this character can be set up fairly well for a steam plant as an isolated unit, the results are not the best, nor is thought in this direction most effectively expended, unless standardization applies to the whole mill. In other words, in order to make up an accurate distribution of overhead charges in a paper mill, all the expenses of operation must be reviewed, and this can be done for the entire plant with little more effort than is required to determine the expense of one department, such as the steam plant. One thought should be kept in mind throughout in considering the suggestions made in this article, namely, that anyone who is going to take the trouble to keep a running check on the steam generator and steam consumption throughout the year, will naturally do it as a part of the cost accounting for the plant as a whole. But when it comes to the question of showing simply the efficiency and economy of steam-plant operation, it is possible to consider the steam plant, and those departments directly concerned with steam consumption, as a thing apart, the only limitation being that the accuracy of such a pre-

sentation depends greatly on whether the data are taken from complete cost records extending back over a period of years, or are developed only as estimates for the particular occasion.

As an example of a standard steam-plant burden set up in this way, and as an indication of the results obtained in one of the best designed and efficiently operated plants in the industry, the following figures will prove of interest. The data are substantially as taken from the actual burden development, which was based on good cost records for several years back.

STANDARD STEAM GENERATION COST

Land Charges—		
Coal storage, 15,000 sq. ft., at 25 cents per sq. ft.		\$0.38
Building Charges—		
Boiler plant, 12,550 sq. ft., at 45.2 cents per sq. ft.		5.673
Machinery and Equipment Charges—		
Boilers and accessories, \$155,000		
Interest at 6.00 per cent.	9.300	
Taxes at 1.20	1.860	
Insurance at 0.25	.388	
Depreciation at 7.50	11.625	
		23.173
Boiler insurance		115
Total fixed		\$28,999
Inventory Charges—		
Coal inventory, \$15,000 at 7.45 per cent (interest, taxes and insurance)		1,118
Labor—		
Engineer (Part)	1,500	
Coal handling	3,850	
Firemen	5,500	
Helpers	4,500	
Ash handling	1,600	
		16,950
Compensation insurance, \$16,950, at \$2.00 per \$100		339
Coal—		
For production, 20,350 net tons, at \$6.00	122,100	
Sundays and holidays, 220 tons, at \$6.00	1,320	
		123,420
Supplies—Mill supplies		1,500
Repairs—		
Labor and Burden	2,000	
Materials	4,200	
		6,200
General Manufacturing Burden—		
Payroll of \$16,950, at 14.0 per cent	2,373	
Electric Power, 94,000 kw. hours, at .055 cents per kw. hr.	517	
		\$181,416
Steam—		
Boiler accessories and general losses:		
12 per cent of total evaporation (425,000,000 lbs.), or 51,000,000 lbs. at cost (48.5 cents per M lbs.)		24,739
Total annual cost		\$206,155
Water evaporated—M lbs.	425,000	
Cost per 1,000 lbs.	48.5c	
Memo—		
B. T. U. per pound of coal	14,000	
Boiler pressure, lbs.	150	
Superheat	0	
Feed water temperature, F.	210	
Evaporation per pound of coal—actual	10.44	
Efficiency	75.8%	

The figures above are the standards for operating the steam plant under the best load, and at an efficiency a little beyond that expected to be attained, at least for the present, although it is about three or four per cent below that possible. For psychological reasons it is better to set the standards well up. The fact that they are not immediately attainable, does not affect in the least the usefulness of periodical comparisons with actual results. For purposes of executive control, the foregoing figures, when reduced to the amount properly chargeable to each month, will therefore serve for comparison against the actual results.

As a rule, it is best to make use of the standards to get at as many facts as possible. For this reason the steam production should be set at that figure which is most appropriate for the steam plant itself. If the consumption requirements are much more or less than that figure, steam costs will go above the unit cost as predetermined. The amount of this excess steam cost, over a period of six months or a year, is the indicator as to whether it would pay to enlarge the steam plant or possibly to buy power if the boilers are overloaded. In the case of underloads, it means that paper production capacity can be increased without much increase in steam cost.

The only way the real cost of such unbalanced conditions can be determined dependably is to set up cost data in some such way as this. Then, at the end of a year or so, the losses can be quite accurately known. Otherwise there is a tendency to

overlook them when the mill is running along fairly evenly, or to overemphasize them if a change in conditions suddenly makes them apparent.

Standards for Steam Consumption

The standard cost per thousand pounds of steam developed as shown is ordinarily a fair figure at which to charge the paper made in accordance with the steam it needs. With this figure as a basis, it is next in order to set up the figures for standard consumption. These figures obviously depend on the paper to be made and the hours that the various machines will operate. They should be determined as completely as possible, it being kept in mind that we are interested only in those variations in product which will have an appreciable effect on steam consumption. The fact that the mill makes a great variety of specialties is no reason for not being able to make an accurate estimate of probable steam consumption, especially when the calculation should be based on running the entire equipment a normal number of hours per year.

After the pounds of paper to be made, and the hours for the steam consuming units to be operated, have been established, the next and perhaps the most important and difficult standards to be determined are the unit rates of steam consumption. These should be the resultant of good practice from tests made for your own mill and others, plus reasonable requirements from a theoretical standpoint. What is good practice today, may be improved upon tomorrow; but, simply by using common sense with sufficient data, standards may be set up which will be of great practical use. In this, as in all other matters that pertain to cost accounting, it should be kept in mind that we are using a means to an end; or, in other words, that our costs are intended to give the maximum of information that we can use to any practical purpose. This does not necessarily mean trying to make everything 100% accurate or to account for every penny; we need only a sufficiently close approach to accuracy to insure that the things we do not feel certain about cannot be of enough consequence to upset our conclusions.

Assume in the present case we have a completely motor-driven plant, with power produced by an extraction turbine of about 1,750 KW rating, all steam for drying and mill heating being extracted from the turbine as required. For the sake of simplicity assume also that no steam is required for manufacturing beyond that needed for mill heating and paper drying. The latter requirement is determined by the production of four paper machines, the first of which is running on heavy papers at 1,400 pounds per hour, the second and third on medium weights at 1,000 pounds per hour, and the fourth on light weights at 460 pounds per hour.

For 305 working days per year, there are available 7,320 operating hours. Allowing $1\frac{1}{4}$ per cent for unavoidable lost time, we have left 7,320 hours for running, it being understood that the latter time is inclusive of washing up. (Incidentally, it may be of interest to some to know that there are mills running with even less time out than this over periods of more than a year.) The gross steam consumption of the turbine is set at 24 pounds per KW hour.

STANDARD STEAM CONSUMPTION

Department, Production and Rate.....	Steam	
	M Lbs.	Value at 48.5c
Steam plant, 12 per cent of total.....	37,728	\$18,298
Turbine—Gross, 11,528,000 kw. hrs., 24 lbs. per kw. hr..	276,672	
Less to dryers and heating.....	93,056	
Net to power.....	183,616	89,054
Heating—Estimate close as possible.....	25,320	12,280
Machine No. 1, 10,266,600 lbs., 2.55 lbs. per lb.....	26,180	12,697
Machine No. 2, 7,230,000 lbs., 2.23 lbs. per lb.....	16,123	7,820
Machine No. 3, 7,230,000 lbs., 2.23 lbs. per lb.....	16,123	7,820
Machine No. 4, 3,325,000 lbs., 2.80 lbs. per lb.....	9,310	4,515
Total requirements.....	314,400	\$152,484

These figures show the total standard cost of steam as charged into production. The standard applying to each particular month

is found by taking the actual hours of operation and actual paper produced and multiplying by the rates given above. The amounts which result are then to be compared with the actual steam used in the different departments. It should be noted that the foregoing statement is independent of the standard burden for steam generation, with the exception of the cost per thousand pounds. This fact should not be lost sight of if steam losses and inefficiencies are to be properly shown, as the problems of generation and of consumption are quite distinct. The only point of connection is the extent to which the efficiency of consumption affects the steam required, and hence the percentage of capacity at which the steam plant will operate.

The two sets of standards indicated above are all that are needed as the foundation for automatically checking steam costs each month. Of course, if the mill is run at much below normal full production capacity, it will be most useful to establish a steam generation standard based as nearly as possible on the actual amount of steam required, and this also applies to capacity operation when the steam plant capacity is much more or less than the steam requirements. The reason for this is that there are two distinct sources of loss in the steam plant, one the efficiency of generation and the other the degree to which the steam capacity is used. To get the whole story, therefore, we should make up at the end of each month a standard cost for the actual steam produced. This is not difficult to do. Through a study of the actual costs under fluctuating conditions for as long a time back as possible, such standards can be set very accurately, and need not be figured twice for approximately identical steam production.

Statement of Actual Steam Distribution

One statement required at the end of each period, for which the fundamental data should be prepared in advance and kept up to date, shows the actual distribution of the total steam actually made. This total is registered by the feed water meter and must be completely accounted for. The accuracy of this accounting is purely a practical matter depending on just how much is known about the steam consumption of the various units of the plant. It is not so difficult as it may appear, for the reason that, while the steam consumption for each unit may vary considerably from one hour to the next, each will maintain quite a uniform average per hour or per pound, etc., over a whole month, and in actual practice all the steam produced can be accounted for very closely without difficulty.

The basic data are taken from tests made on the engines, turbines, pumps, paper dryers, etc., and the rates so developed should be checked by steam meter readings at the feed lines for these units. Steam meters are useful here in detecting and locating losses promptly; but if good test data are available, the total steam may be quite satisfactorily accounted for even without meters, provided it is understood that unusual leaks will show up as unaccounted-for steam, and such leaks are then run down by careful inspection.

Figures for Checking Costs

The various sets of figures which can be developed for checking steam costs are the following, there being three for steam generation and three for steam consumption:

1. Standard Cost of Capacity Generation.
2. Standard Cost of Efficient Consumption—Normal Production.
3. Standard Cost of Actual Generation.
4. Actual Cost of Actual Generation.
5. Standard Cost of Efficient Consumption—Actual Production.
6. Standard Cost of Actual Consumption.

The first two are the more or less permanent standards for generation and consumption predetermined for a year or more of capacity operation. These have already been shown in statement form in this article.

The other sets of figures—the third and fourth for generation, and the fifth and sixth for consumption—will be presented in comparative form, as they are ordinarily prepared for executive attention. In other words, we have combined in one statement the standard and the actual costs for actual generation; and in another statement the figures for efficient consumption based on actual production, and for actual consumption.

These two statements have been prepared with annual totals, as this basis is somewhat more convenient, and it also has the advantage of including the whole story. In actual practice, the figures come up for judgment each month, although important policies will naturally be decided from the accumulated figures of many months.

Determining Economy and Efficiency of Generation

The first comparative statement, presented herewith, shows the actual cost of generating steam for the year, with parallel figures according to the established standard cost of generation.

It is not necessary here to go into the accumulation of actual costs. Nearly all mills have developed them far enough so that any further details required can be had by getting a further analysis of the data now being recorded. Outside of the distribution of fixed charges, the recording of the actual costs of labor, supplies, coal, repairs, etc., and the total water evaporated is simply a matter of taking the trouble to have them reported. They should be tied in with the books, both because this is the only sure way to get everything into the costs, and because it is easier to tie in all costs in one operation than to try to check back individual items, as must be done if the costs are run as a side line.

It is important to note, however, that the standard cost with which the actual is compared, is based on efficient generation of the amount of steam actually made. If the latter is approximately equal to the normal capacity established for the steam plant, the same figures would apply here as were developed for the original standard based on 425,000,000 pounds of water evaporated. In this case, however, the actual evaporation is only 378,400,000 pounds, so that our standard cost in dollars and cents must be reduced to this basis, and this has been done here in setting up the figures which are to be used for comparison with the actual cost.

COMPARATIVE STEAM GENERATION COST

	Standard cost per year	Actual cost for the year	Actual % of standard
Fixed charges	\$28,999	\$28,999	100.0
Inventory charges	1,118	1,330	119.0
Labor—			
Engineer	\$1,500	\$1,500	
Coal handling	3,600	4,000	
Firemen	5,400	5,600	
Helpers	4,420	4,600	
Ash handling	1,500	1,670	105.7
Total	16,420	17,370	
Compensation insurance	328	347	105.7
Coal production	\$112,620	125,400	
Sundays	1,320	1,560	111.3
Total	113,940	126,960	
Supplies	1,450	1,670	115.2
Repairs—Labor	\$1,950	\$2,330	
Materials	4,100	4,759	
Total	6,050	7,089	117.1
General manufacturing	2,299	2,432	105.7
Electric power	495	535	108.0
Total	\$171,099	\$186,732	
Steam, 12 per cent.	23,340*	34,632	148.3
Total cost	\$194,439	\$221,364	113.8
Water evaporated, M lbs.	378,400	378,400	
Cost per M lbs.	51.4c	58.5c	113.8
M lbs. useful steam	332,992	319,200	95.8
Net cost, useful steam	\$171,099	\$186,732	109.0
B. T. U.	14,000	14,000	
Pressure, lbs.	150	150	
Superheat	0	0	
Feed water	210	195	92.9
Unit evaporation, actual	10.07	9.03	89.7
Efficiency, per cent.	73	66	90.4
M lbs. paper made, actual	27,470	27,470	
Coal per lb. paper	1.365	1.524	111.7
Steam cost per ton	\$12.45	\$13.58	109.0
Steam cost at standard consumption rate and cost of generation.	\$9.57		

*Actual.

COST SECTION

No particular comment is necessary regarding these figures, the whole idea being that you first get your actual cost for making a given quantity of steam, and then compare it with the standard cost for making this same quantity. The standard is, of course, harder to make at first than after the results over some period of time have been examined, but this simply means that its usefulness increases with the time spent upon it. Those who question the desirability of acting upon such standards should reflect that the executive must always use some standard in checking the work of his subordinates, and it is certainly better to do this with reasonably complete statements which show the relation of the many correlated conditions, than to make criticisms on the basis of rough totals, like the pounds of coal per pound of paper, etc. This is particularly true in the case of steam, where the efficiency of both generation and consumption affects the totals, and any losses are not usually due to the lack of skill on the part of one individual, or to the efficiency of one part of the equipment. From this viewpoint it is hardly necessary to point out how the skill of the executive in judging such matters will improve as reports like these are studied in successive periods.

Comparing Actual and Standard Consumption

So far our comparison has related to the economy and the efficiency of generation; our next statement shows the comparison between standard and actual figures for consumption. The former figures are made up by extending the actual paper made or the hours operated at the standard consumption rates; the latter represent either actual consumption as recorded by steam meters, or calculated consumption at the rates developed by test.

In regard to meter installations, it should be said that it is desirable to place the meters immediately at the inlet to the consuming units. This determines the consumption of the unit, and also by difference determines the boiler losses and pipe condensation, since the boiler meter gives the total water evaporated. These losses between the boilers and the consuming units are important to know about, and they are more equitably charged in the boiler plant burden than against those particular units which happen to be at some distance from the steam plant. As to the number of meters required, the particular situation in each mill is the controlling factor. As suggested above, if tests are made of the consuming units and kept well checked up, meters can be dispensed with in proportion as the tests and checks account satisfactorily for all the steam generated. For purposes of daily control, the meters are most desirable.

As to the accuracy of steam meters, no two opinions are alike. Such meters unquestionably need calibration to start with, and this should be repeated from time to time. Quite a number of mills have had poor success with them; but after seeing the results in several plants where they work with a very satisfactory approach to accuracy, we are of the opinion that there is nothing inherent in them to prevent getting the required results. The trouble appears to be with the users rather than with the meters; and if a real desire is shown to make them work, we believe the results will be satisfactory.

COMPARATIVE STEAM CONSUMPTION

Department	Standard			Actual			Loss
	Rate	M Lbs.	Value at 48.5c	Rate	M Lbs.	Value at 58.5c	
Steam plant	12%	37,309	18,095	15.6%	59,200	34,632	16.537
Turbine—							
11,400 M. kw. hrs. 24lb		273,600		28lb	319,200		
Less extracted		91,672			111,510	@48.5c	
Net to power		181,928	88,235		207,690	100,730	12.495
Heating—		25,320	12,280		28,700	13,920	1.640
Machine No. 1 ..		9,950 M lbs.		2.55	25,373	12,306	3.20
Machine No. 2 ..		7,200 M lbs.		2.23	16,056	7,787	2.50
Machine No. 3 ..		6,970 M lbs.		2.23	15,543	7,538	3.00
Machine No. 4 ..		3,350 M lbs.		2.80	9,380	4,549	3.60
Totals		310,909	150,790		378,400	189,444	38.654

In the following paragraphs we comment on the items in the comparison of standard and actual consumption, in the order in which they appear.

The loss charged to the steam plant is made up of three elements: First, steam charged to boiler blow downs and accessories; second, steam lost in the piping through the mill; and third, the loss due to this excess consumption being made at a cost of 58.5 cents instead of 48.5 cents. The steam plant on this basis is the only unit charged with this higher unit cost, and this is done because both the excess steam and the excess cost go to the same place. These losses may be separated if desired; and a separation would be desirable if the excess consumption were chiefly in the piping outside of the boiler plant, for which the latter was not responsible. In making the charge shown above, it is assumed that the 59,200 M pounds charged the steam plant is registered by direct meter readings, or from the difference between readings at the consuming units and the total evaporation.

The turbine is seen to be taking more steam than the standard calls for, owing presumably to its mechanical condition. In calculating the standard for this unit, due allowance should be made for the excess total steam required per hour for higher percentages of extraction, in case the process steam requirements go up more in proportion than does the power required.

Heating consumption is assumed from meters placed on the feed into the heating mains. If these are not available, the actual steam for heating may either be estimated or taken at the same amount as the standard.

Drying losses at the machines are due to inefficient drying conditions or to variations in percentage of dryness of the paper before and after drying. The standards in this particular case were set on the basis of a drying efficiency of about 90 per cent, which corresponds roughly to 1.2 pounds of steam per pound of water driven off from the paper.

Making the Cost Accounting Entries

In making use of the above figures in the cost accounting, the procedure is quite simple. In the first place, the actual cost of operation is a charge to the Steam Plant account and a credit to the various Inventory and Payroll accounts. This gives a cost of \$186,732. This corresponds to 319,200 M pounds of useful steam, or a cost per thousand pounds of 58.5 cents. The steam for the steam plant and the general losses amount to 59,200 M pounds, and pricing this at 58.5 cents, we get a cost of \$34,632. In addition to this, we have the other items of steam consumed on an actual basis; and pricing these at the standard cost of 48.5 cents per M, we secure the basis for a journal entry charging the steam plant account and the other departmental accounts with the amounts shown on the statement for the actual steam consumption, the total of \$189,444 being credited to the Steam Plant account. The latter was charged with \$186,732 directly, and is charged by this entry with \$34,632 more, giving a total cost of \$221,364 for generating the steam shown by the evaporation meter. This total is the one shown on the statement for actual cost of generation.

This leaves a balance in the Steam Plant account of \$221,364 less \$189,444, or \$31,920. Turning now to the standard cost for generating 378,400 M pounds of steam, we get a figure of \$194,439, which is \$26,925 less than the actual cost. (This amount is seen to consist of \$15,633 for increased direct expense and \$11,292 for excess steam charged back to the steam plant.) The \$26,925 is next journalized by a charge to current Profit and Loss as a Burden Variance, or excess of actual cost over standard, and by a credit to the Steam Plant account. The remaining balance in the Steam Plant account is now \$4,995, and this should be credited to the steam plant and charged to Profit and Loss as Unearned Burden, or the loss due to operating at less than capacity. (This loss is seen to consist of two elements, a loss of \$16,287 on the cost of useful steam, and a gain of \$11,292 from added

steam production required to make up for general losses.) Summarizing the results of these entries, we find there is now no balance left in the Steam Plant account; and of the original total, \$186,732, we have charged to consuming units \$154,812, to Burden Variance \$26,925, and to Unearned Burden \$4,995.

The same process applies to the steam consuming departments. These have been charged with their direct expenses for labor, supplies, etc., as a part of the same entries which charged the steam plant. They have also been charged with the steam they actually used through the entry which credited this consumption to the steam plant. These entries, plus any other distributions chargeable to these departments, result in a total burden charged to each in just the same way as has been shown for the steam plant.

These producing departments have in turn been credited, and the cost of production charged, with the standard costs per machine hour or per pound worked out to include the standard consumption of steam originally allowed for. As a result, therefore, each department shows a variance between the actual and the standard cost of each burden element, and the net loss, or burden variance due to the steam element, is shown on the statement which compares the actual and standard costs of steam consumption.

The procedure illustrated here is intended to show the details necessary to get a continuous check on the effect of steam costs on profit and loss, and the reasons for the losses. It should be kept in mind that it will not be necessary to give the subject such intense study indefinitely, for when conditions become standardized and also efficient, the calculation of the monthly standards may be omitted, and the total loss (representing both Burden Variance and Unearned Burden) may be closed out in one amount from the Steam Plant account after this account is credited with the total distributed to departments. In this event the whole procedure becomes automatic, and involves practically no work beyond that of collecting the actual costs each month, which practically everyone does to a greater or less degree. In order to have the data for getting the whole story at any time, it is necessary to start off with the two original standards as described, one for generation and one for consumption, but these are simply a matter of giving thought to what you propose to have your cost accounts tell you before you start collecting actual costs. Indeed, the establishment of these standards simplifies the actual work each month instead of increasing it. This is due to the establishment of scientific distribution rates, instead of having to wait and work out the actual distribution for accessory centers each month.

Need for Plant Reconstruction

To conclude, one further thought is perhaps in order, although it has general rather than specific application. Judging from the excellent mechanical condition of a few paper mills (and a lost time record of about 1 per cent means excellent mechanical conditions), we think it may be correct to say that the industry as a whole is in very poor mechanical condition, worse perhaps than that of any other large industry, owing to some peculiar psychology which has led many paper mill executives to spend as little as possible on their plants and equipment. In this respect their steam plants average up in just about the same way as the rest of the equipment, and are worthy of special mention only because they cost so much to run.

It is to be expected, therefore, that during the next five years those mills which expect to keep up with the procession are going to make some sizable investments in equipment and will try out many new ideas for improving economy of operation. You all know, from previous experiences, that when you make an investment in plant or change your methods, you become particularly interested in knowing how much you save, and that as a rule you are unable to tell because you never kept track of how much the old methods cost, and in fact never thought about

keeping track of them until the new were about to be installed.

This policy has cost paper mills a very large sum of money, especially in the matter of steam equipment, where purchases have been made without knowing the actual costs—over a period of years—and the possible savings. When purchases are made on the spur of some immediate necessity, the executive who has had no figures is working in the dark, and he turns the matter over to his own or other engineers, who have no knowledge of the costs in that particular plant. The result, too many times, has been the purchase of units which are really efficient in themselves, but which in that particular plant have made insignificant savings, or in some cases even increased losses.

Suppose your boiler plant is greatly overloaded on account of excessive consumption, and you spend \$150,000 to double its size. To be sure, you may save something as long as the excessive consumption of steam exists, but what will be your state of mind if consumption is suddenly brought down to a reasonable figure, and you find that your old boiler plant was large enough? Think also of the consequences if your engineer does not appreciate the money value of exhaust steam, and installs a condensing engine for more than the amount of power you need, and forces you to use live steam for drying and other processes.

These are not imaginary difficulties but are taken from actual cases as we have found them. Examples of such errors can be multiplied indefinitely; in fact, practically every mill has had some

such experiences. The point which we wish to make here is that, since so many mills are surely going to make important changes in equipment before long, let them start in now to get at the economic facts of current operation and develop their true costs, so that when such questions do come up, they will know first of all just where and why the money has been going in the past, and just how much the new proposals will add to the bank account in the next year or more.

Although some of the material in these articles may seem complicated and hard to follow, we believe that any executive would like to know about just such matters before authorizing the expenditure of many thousands of dollars and taking the losses from interrupted production while changes are being made. If this is true, then it also follows that it is better to accumulate and study this information before it is urgently needed, than to try to extract it on short notice from incomplete records. If this suggestion is adopted of getting the whole story before doing anything radical, it is safe to say that although many will see the need for new equipment, there will also be quite a number who will realize that their main difficulty lies in the inefficient use of what they already have. There are just about as many people who are inclined to buy things they do not need, as there are reluctant purchasers of real necessities; but the very fact that a man is capable of directing an organization that calls for such broad knowledge as a paper mill, is a good indication that he can make correct decisions if he knows all the facts.

SUMMER SCHOOL AT UNIVERSITY OF MAINE

The Chemistry Department of the University of Maine will conduct a summer school course in pulp and paper chemistry and technology from June 25 to August 4.

The University of Maine was the first institution to offer a course in pulp and paper in this country and the success of its graduates is an excellent measure of the value of such a school. The men who have graduated from this school have been unusually successful and already many of them are heads of research departments, superintendents, chief chemists, managers, etc.

The work given in pulp and paper at the summer school is designed to meet the specific needs of students who desire, and are qualified, to take pulp and paper courses and also for pulp and paper mill men with or without technical training, who have had practical experience and who desire to gain a scientific knowledge of important phases of pulp and paper manufacture and testing or phases of work with which they are unfamiliar.

All work completed will be given the regular University credit for either the Bachelor's or Master's degrees. Transference of credits to other institutions will be arranged for as during past years for those so desiring.

Applications for admission to the pulp and paper courses should be made in person or in writing and forwarded to the University as soon as possible.

The courses offered this year are as follows:

87 Paper Testing and Analysis

This course of 75 hours of lecture and laboratory work is devoted to the physical, chemical and microscopic testing of a variety of papers, employing domestic and foreign testing machines and methods. Among physical tests are ream weight by different methods, thickness, surface error, breaking and bursting strength, temporary and permanent stretch, fold, tear, volume composition, etc. Chemical tests include kind and amount of size, degree of sizing, kind of filler, amount of coating, character of dirt, etc. The microscopic work includes micro characteristics of the more common fibres, identification of unknown mixtures, percentage stock determination, micro measurements of fibre length, etc. Laboratory fee, \$3 and breakage.

COST SECTION

65 Paper Technology

About 25 lectures on the various processes and machines used in paper making. Consideration is given to stock boiling, washing, bleaching, furnish, beating, size filler, the paper machine, slitting and rewinding, supercalendering, etc.

67 Paper Manufacture

A 75-hour laboratory course devoted to furnish, beating, sizing, loading, coloring, water treatment, examination of papermakers' supplies, etc. The aim of this course is largely to bring out the effect of variables on the final result. Laboratory fee, \$4 and breakage.

66 Pulp Technology

About 25 lectures on the soda, sulphate, sulphite, milk-of-lime and mechanical pulping processes and machines and equipment for the same.

68 Pulp Manufacture

A 75-hour laboratory course on the soda, sulphite and milk-of-lime processes.

86 Pulp Bleaching

A 75-hour lecture and laboratory course on the chemistry and technology of the process and the effect of variables on the rate and color. It includes bleach analysis, determination of bleach for standard color, loss on bleaching, effect of stock concentration, agitation, degree of alkalinity and acidity, temperature, etc. Work may be given in determination of overbleach, oxycellulose, lignin, etc. Laboratory fee, \$3 and breakage.

The instruction will be given by Prof. J. L. Merrill, pulp specialist, and R. W. Wilkins, paper specialist, and other members of the Chemical Department. Ten or more lectures on specialized phases of the subject will be given by men of ability engaged in the industry.

Courses in general, organic, physical and analytical chemistry will also be given by the Chemical Department.

At or before the time of registration, June 25, each candidate must present evidence of qualification for the work. Correspondence should be addressed to Dr. C. A. Brautlecht, Chemistry Department, Orono, Me.

Agents
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indirect cooking

PERKINS-GOODWIN CO.
 NEW YORK

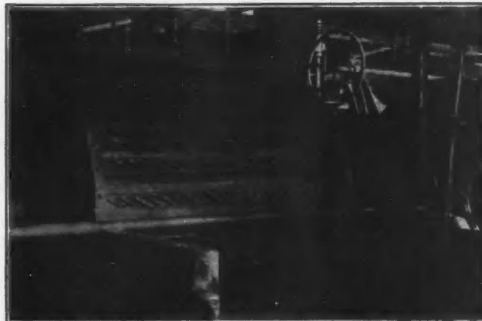
PULP and PAPER

Agents **A/S Toten Cellulosefabrik**
BLEACHED SULPHITE
AGENTS GULSKOGEN
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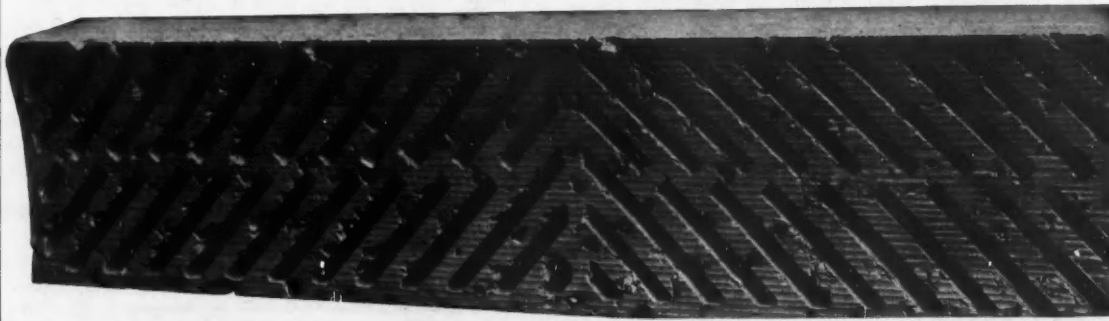
Conclusive Evidence on Beater Filling

THE GENERAL use of Helin Beater Filling in European mills, and the great number of mills which have installed it in this country are significant. The better quality of pulp from beaters thus equipped is obvious. The increase to production is surprising. Specific facts and figures await your request.

FIBRE MAKING PROCESSES, INC.
 Chicago



The picture above shows Helin Beater Filling applied to a Hollander in an American mill.



Imports and Exports of Paper and Paper Stock

NEW YORK, BOSTON, PHILADELPHIA AND OTHER PORTS

NEW YORK IMPORTS

WEEK ENDING JUNE 9, 1923

SUMMARY

News Print 1,444 rolls
 Wrapping Paper 1,315 bls., 23 cs., 4,340 rolls
 Packing Paper 1,674 bls., 457 pgs., 2,467 rolls
 Printing Paper 488 bls., 208 lbs., 130 rolls
 Cigarette Paper 2,016 cs.
 Filler Paper 41 bls.
 Wallpaper 1,210 rolls, 16 bls.
 Hangings 1 bl., 6 cs., 20 bls.
 Kraft 763 bls., 1,392 rolls, 72 bls.
 Surface Coated Paper 71 cs.
 Tissue Paper 11 cs.
 Drawing Paper 88 cs.
 Blue Print Paper 122 rolls
 Miscellaneous Paper 519 bls., 12 cs., 2,081 rolls

CIGARETTE PAPER

Rose & Frank, Olen, Havre, 40 cs.
 Rose & Frank, Eglantine, Havre, 40 cs.
 P. J. Schweitzer, Belgenland, Antwerp, 45 cs.
 R. J. Reynolds Tobacco Co., Sarcoxie, St. Nazaire, 625 cs.
 De Manduit Paper Corp., Sarcoxie, St. Nazaire, 266 cs.
 American Tobacco Co., Sarcoxie, Bordeaux, 1,000 cs.

FILTER PAPER

Orbis Products Trading Co., Sarcoxie, Bordeaux, 20 bls.
 Bernard Judae & Co., Sarcoxie, Bordeaux, 21 bls.

WALL PAPER

The Prager Co., Minnekahda, Hamburg, 489 rolls.
 Natl. City Bank, Minnekahda, Hamburg, 721 rolls.
 A. C. Dodman, Jr., Belgenland, Antwerp, 11 bls.
 A. Murphy & Co., Aquitania, Liverpool, 1 bl.
 A. Murphy & Co., Celtic, Liverpool, 4 bls.

PAPER HANGINGS

A. C. Dodman, Jr., Celtic, Liverpool, 1 bl.
 A. C. Dodman, Jr., Celtic, Liverpool, 1 cs.
 W. H. S. Lloyd & Co., Maryland, London, 5 cs.
 W. H. S. Lloyd & Co., Maryland, London, 20 bls.

PRINTING PAPER

J. L. M. Smythe & Co., Thuringia, Hamburg, 46 bls.
 B. F. Drakenfeld & Co., Carmania, Liverpool, 22 cs.
 Globe Shipping Co., Minnekahda, Hamburg, 50 cs.
 Natl. City Bank, Pres. Harding, Bremen, 71 cs.
 Natl. City Bank, Pres. Harding, Bremen, 349 bls.
 H. Reeve Angel & Co., Pres. Harding, Bremen, 37 bls.
 Globe Shipping Co., Hannover, Bremen, 56 bls.
 Globe Shipping Co., Hannover, Bremen, 130 bls.
 M. O'Meara Co., Hannover, Bremen, 65 cs.

ROLLS NEWSPRINT

Parsons & Whittemore, Hannover, Bremen, 327 rolls.
 New Haven Times, Hannover, Bremen, 216 rolls.
 Natl. City Bank, Hannover, Bremen, 103 rolls.
 Corn Exchange Bank, Orbita, Hamburg, 315 rolls.
 Irving Bank, Columbia Trust Co., Stavangerfjord, Kristiania, 483 rolls.

WRAPPING PAPER

Blauvelt, Wiley Paper Mfg. Co., Columbia, Glasgow, 391 bls.
 Blauvelt, Wiley Paper Mfg. Co., Columbia, Glasgow, 23 cs.
 C. K. MacAlpine & Co., Thuringia, Hamburg, 20 rolls.
 C. K. MacAlpine & Co., Thuringia, Hamburg, 30 bls.
 D. S. Walton & Co., Thuringia, Hamburg, 24 bls.
 D. S. Walton & Co., Thuringia, Hamburg, 60 rolls.
 Thos. Barrett & Son, by same, 47 bls.
 Carl Steiner, by same, 6 bls.
 Foreign Paper Mills, by same, 108 bls.
 Chemical Nat'l Bank, by same, 225 bls.
 Chemical Nat'l Bank, by same, 136 rolls.
 Ladenburg, Thalman & Co., Rotterdam, Rotterdam, 1,650 rolls.
 Ladenburg, Thalman & Co., by same, 163 bls.
 Wilkinson Bros. & Co., Inc., Schodack, Rotterdam, 263 bls.
 Wilkinson Bros. & Co., Inc., by same, 2,474 rolls.

PACKING PAPER

Mischell & Williams, Argentina, Trieste, 1,201 bls.
 Poland Paper Co., by same, 101 bls.
 Republic Bag & Paper Co., by same, 179 bls.
 Republic Bag & Paper Co., Thuringia, Hamburg, 457 pgs.
 Republic Bag & Paper Co., by same, 220 rolls.
 Chemical Nat'l Bank, by same, 2,604 rolls.
 Chemical Nat'l Bank, by same, 28 bls.
 M. O'Meara Co., Caucasier, Antwerp, 165 bls.
 Republic Bag & Paper Co., Minnekahda, Hamburg, 1,643 rolls.

KRAFT PAPER

Republic Bag & Paper Co., Orbita, Hamburg, 763 bls.
 Republic Bag & Paper Co., by same, 1,392 rolls.
 J. B. Harris & Co., Hannover, Bremen, 72 bls.

SURFACE COATED PAPER

Globe Shipping Co., Pres. Harding, Bremen, 71 cs.

TISSUE PAPER

F. C. Strype, Celtic, Liverpool, 11 cs.

DRAWING PAPER

Keuffel & Esser, Thuringia, Hamburg, 55 cs.
 Keuffel & Esser, Resolute, Hamburg, 33 cs.

BLUE PRINT PAPER

Keuffel & Esser, Resolute, Hamburg, 94 rolls.
 Keuffel & Esser, Thuringia, Hamburg, 28 rolls.

PAPER

H. Bull & Co., Thuringia, Hamburg, 43 bls.
 F. L. Kramer & Co., Maryland, London, 6 cs.
 Wilkinson Bros. & Co., Inc., United States, Trondhjem, 376 bls.
 Wilkinson Bros. & Co., Inc., by same, 224 rolls.
 Melby, Kutroff & Co., Stavangerfjord, Kristiania, 55 rolls.
 Fernstrom Paper Co., Inc., Orbita, Hamburg, 302 rolls.
 Fernstrom Paper Co., Inc., by same, 100 bls.
 Baeter Paper Co., Lithuania, Libau, 1,500 rolls.
 W. L. Banc & Co., France, Havre, 3 cs.
 Coena, Morrison & Co., by same, 3 cs.

RAGS, BAGGING, ETC.

Katzenstein & Keene, Hordis, Genoa, 132 bls. rags.
 Royal Manfg. Co., by same, 76 bls. cotton waste.
 Nat'l City Bank, Hordis, Leghorn, 7 bls. rags.
 First Nat'l Bank, by same, 20 bls. rags.
 Schall & Co., Hannover, Bremen, 134 bls. rags.
 State Bank, Pr. Van Buren, London, 35 bls. rags.
 Equitable Trust Co., Veendam, Rotterdam, 137 bls. rags.
 Irving Bank, Col. Trust Co., W. Cawthorn, Marseilles, 46 bls. rags.
 Irving Bank, Col. Trust Co., by same, 26 bls. new cuttings.
 Salomon Bros., & Co., Marengo, Antwerp, 231 bls. new cuttings.
 W. Schall & Co., Caucasier, Antwerp, 25 bls. new cuttings.
 E. J. Keller Co., Inc., by same, 88 bls. bagging.
 Nat'l City Bank, by same, 140 bls. cotton waste.
 Nat'l City Bank, by same, 55 bls. new cuttings.
 Nat'l City Bank, by same, 314 bls. rags.
 Goldman Sachs & Co., by same, 248 bls. rags.
 Ayres, Oddy & Co., Bankdale, Barcelona, 123 bls. cotton waste.
 Ayres, Oddy & Co., Carmania, iverpoolL, 183 bls. cotton waste.
 Royal Manfg. Co., by same, 16 bls. cotton waste.
 Reis & Co., Schodack, Rotterdam, 162 bls. cotton waste.
 Guaranty Trust Co., Celtic, Liverpool, 50 bls. cotton waste.
 Guaranty Trust Co., Alberta, Venice, 187 bls. rags.
 L. H. Abenheimer, Swazi, Manchester, 204 bls. bagging.
 Prince & Kennedy, Kerhonkson, Dublin, 231 bls. bagging.
 J. Wolfe, Eglantine, Dunkirk, 90 bls. cotton waste.
 C. A. Haynes & Co., Bradclyde, Hamburg, 145 bgs. picker waste.
 M. O'Meara Co., by same, 18 bls. new cuttings.
 E. J. Keller Co., Inc., by same, 182 bls. rags.
 Salomon Bros. & Co., by same, 69 bls. rags.
 S. Silberman, by same, 82 bls. rags.
 E. J. Keller Co., Inc., L. Luckenbach, Kobe, 293 bls. rags.

OLD ROPE

E. J. Keller Co., Inc., N. Range, Dundee, 120 bales.
 Brown Bros. & Co., Marengo, Hull, 107 coils.

Brown Bros. & Co., Veendam, Rotterdam, 103 coils.
 Brown Bros. & Co., Bristol City, Bristol, 79 coils.
 Brown Bros. & Co., Wells City, Bristol, 82 coils.
 Brown Bros. & Co., Rotterdam, Rotterdam, 94 coils.
 Brown Bros. & Co., Maryland, London, 62 coils.
 Brown Bros. & Co., by same, 43 bales.
 Ellerman, Wilson Co., by same, 106 coils.
 Internat'l Purchasing Co., Schodack, Rotterdam, 82 coils.
 International Purchasing Co., Alberta, Venice, 13 bales.
 Castle & Overton, by same, 26 bales.
 E. J. Keller Co., Inc., Alberta, Trieste, 75 coils.
 Bemis Bros. Bag Co., Bankdale, Barcelona, 29 coils.

WOOD FLOUR

B. L. Soberski, Stavangerfjord, Kristiania, 750 bags.
 A. Kramer & Co., Rotterdam, Rotterdam, 400 bags.

WOOD PULP

Johannesson, Wales & Sparre, Inc., Drottningholm, Gothenburg, 305 bls. Kraft pulp.
 Johannesson, Wales & Sparre, Inc., by same, 650 bls. sulphite pulp.
 Johannesson, Wales & Sparre, Inc., Allaguash, Sundsvall, 1,500 bls. wood pulp.
 Wood Pulp Trading Co., by same, 3,300 bls. wood pulp.
 Nilsen, Lyon & Co., Inc., by same, 126 bls. wood pulp.
 R. F. Hammond, Inc., by same, 1,500 bls., 250 tons wood pulp.
 Castle & Overton, Pres. Harding, Bremen, 529 bls. wood pulp.
 Castle & Overton, Rotterdam, Rotterdam, 300 bls. wood pulp.
 Castle & Overton, Hannover, Bremen, 2,250 bls. wood pulp.
 M. Gottesman & Co., Inc., by same, 1,800 bls. wood pulp.
 M. Gottesman & Co., Inc., Alberta; Trieste, 4,000 bls. wood pulp.
 Poland Paper Co., Argentina, Trieste, 2,652 bls. wood pulp.
 Tidewater Papermills Co., Bornholm, Point au Pic, 8,647 bls. wood pulp.

CASEIN

Atterbury Bros., Inc., Canadian Cruiser, Auckland, 120 bags.
 Atterbury Bros., Inc., Suffern, Havre, 162 bags.
 Atterbury, Inc., Sarcoxie, Bordeaux, 256 bags, 25,049 ks.
 M. Cantine Co., by same, 532 bags, 39,994 ks.
 Bank of the Manhattan Co., Thuringia, Hamburg, 200 bags.
 National City Bank, Minnekahda, Hamburg, 302 bags.
 Casein Manfg. Co., E. Knight, Bombay, 298 bags.
 T. M. Duche & Sons, by same, 163 bags.
 Monite Waterproof Glue Co., Eglantine, Havre, 100 bags, 10,000 ks.
 A. Klipstein & Co., Inc., Bradclyde, Hamburg, 178 bags, 10,188 ks.

BOSTON IMPORTS

WEEK ENDING JUNE 9, 1923

Nilsen, Lyon & Co., Inc., Allaguash, Sundsvall, 2,250 bls. chemical pulp.
 American Wood Pulp Co., by same, 1,250 bls. sulphite pulp.
 Johannesson, Wales & Sparre, Inc., by same, 500 bls. sulphite pulp.
 Pagel, Horton & Co., Inc., Allaguash, Wallvik, 4,800 bls. sulphite pulp.
 American Wood Pulp Corp., by same, 2,400 bls. sulphite pulp.
 Bulkley, Dunton & Co., by same, 500 bls. sulphite pulp.
 Johannesson, Wales & Sparre, Inc., Allaguash, Harnosand, 3,000 bls. sulphate pulp.
 J. Andersen & Co., by same, 1,200 bls. sulphate pulp.
 Mead, Patton & Co., by same, 4,072 bls. sulphate pulp.
 Price & Pierce, Ltd., by same, 2,250 bls. sulphate pulp.
 Castle & Overton, ——— Hamburg, 1,790 bls. wood pulp.

RAGS, BAGGING, ETC.

Crocker, Burbank Co., Verbania, London, 175 bls. paper stock.

(Continued on page 68)

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Otis Bldg.

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Howard Ledger

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Mountain Mill Paper Co.

(Write for Samples and Quotations)

SALES OFFICE
110 E. 42nd Street
NEW YORK

New York Market Review

OFFICE OF THE PAPER TRADE JOURNAL,
WEDNESDAY, June 13, 1923.

Paper manufacturers are beginning to feel the oppression of the summer slackness in buying. There is no doubt that buyers are holding off and trading in the open market in all grades is irregular. A general tendency to let down is gradually seeping through trade channels and the demand is spotty with little indication that it will improve before next month.

With all this, however, paper men say that the summer is better for business than others since the war. During the four years of unprecedented prosperity business men forgot that there was such a thing as seasonal dullness. The fact that this is making itself felt once more is nothing unusual. It is simply a sign that the industry is back to normal, a condition which paper men said would never arrive again three years ago during the severest time of the readjustment period.

In the raw material markets the falling off in buying has been more pronounced than in the finished paper field. In paper the open market has been the heavy sufferer. Contract goods are still moving regularly and news print men say that they have enough business right now to keep the mills at work well into next month. Tissue men say the same thing and apparently this market has taken a real spurt although the rush of customers is not enough to cause any great anxiety among producers.

In the fine paper market there was a slight falling off in business last week which is attributable to the season. Beside this manufacturers reported that business was unusually good for the time of year. Trading on the open market is not as good as it was during the winter, but lots are moving satisfactorily, dealers reported. In the contract field the mills are busy filling orders and there is no reason to believe that there will be any real falling off there until conditions have changed considerably more.

Book paper remained practically unchanged during the week. There was little reduction in buying and none in prices. Neither is there anything to indicate that quotations will take an upward trend. Things are expected to go along in this quarter at the same rate for some time to come.

The news print market is still in a strong position and if the orders that are piled up in the manufacturers' books are any criterion it is likely to remain that way. An interesting subject for speculation among local news print dealers and manufacturers' agents has been just how much the death of *The Globe* would affect news print consumption in New York.

Some are inclined to believe that it will have no effect at all and that it will simply mean that the consumption will eventually be the same except that it will be distributed among a number of newspapers. It is said that the first issue of the amalgamated paper sold in tremendous quantities nearly equaling that of the two separately. This did not continue through the week, however, according to reports although sales of *The Sun* and *The Globe* were larger than *The Sun* alone.

All of the evening newspapers are making strenuous efforts to attach the circulation of *The Globe*, but just how successful they are going to be it is hard to say. *The Globe* was a liberal newspaper of independent policy and the backbone of its readers was drawn from citizens of that stamp. It is probable that when the situation finally settles down it will be found that they have gone over in a body to the only evening paper of similar policies left in the city. The large list of out of town subscribers of the old *Globe* will probably be lost to New York so far as news print consumption is concerned. Many of the local readers may go over to morning papers.

Tissues have had a prosperous week in the contract field although trading has been rather sporadic on the open market. There is every indication that tissues in general are on the up grade.

Although there have been no great price revisions in either direction dealers say that this is one of the best summers they have had in a long time. It is probable that quotations will not be altered until manufacturers are assured that they are in a strong enough position to do so.

Board has suffered from a slight falling off in demand but prices are remaining constant due to their belief that there will be a revival in the near future. Up to a week or two ago business in board was exceptionally good and there is no reason to believe that it will not continue so after the consumers use up their present stocks a little more.

Mechanical Pulp

Although mechanical pulp is not moving so rapidly as it was a month ago the demand for it is considerably above what is to be expected at this time of year. Grinding mills have enough to keep them busy on contracts which were let at that time and there is no present indication that prices are due for alteration.

Chemical Pulp

Quotations on chemical pulp of all sorts is firm with the demand slowing up considerably. Movement on contract is steady although orders are not so large as dealers wish. On the open market the trading is irregular with here and there an isolated lot seeking a buyer at a price below the market. Dealers on the whole are optimistic and attribute the disinterestedness of the buyers to the same reason that other quarters of the market report—summer dullness.

Old Rope and Bagging

Bagging is exhibiting all of the outward signs of neuresthenic depression. Old rope is in about the same condition. These two articles are generally the first to suffer in any slackening of demand in the raw material market and this time is no exception. Prices are a little ragged but fluctuations are all within a small scope.

Rags

Mills using rags are not showing much of an inclination to lay in future supplies this week and consequently the rag market is still a little slow this week. Packers are not offering large tonnage orders and importations have become slightly smaller. Quotations have been swinging about whenever a large order loomed up. Dealers believe that things are going to become more stable within a short time now as they feel that the mills cannot safely hold out much longer considering the business they have.

Waste Paper

Considerable weakness was shown in the waste paper market during the week although it was not serious enough to cause dealers much anxiety. There was a slight easing off in prices during the week but reductions were not radical.

Twine

Twine was a little easier this week, but the demand is still in fair condition. Prices remained firm.

Government Has Sold Blown Down Timber

The Ontario government has disposed of a quantity of blown-down spruce and white and red pine, lying in the waters of Lake Temagami, which was caught from the blow-down of the Temagami forest reserve. William Milne & Sons, of North Bay, Ont., have paid a lump sum of \$5,250 for an estimated quarter of a million board feet.

C. H. Dyke Goes With Pioneer Paper Co.

MARION, Ind., June 11, 1923.—C. H. Dyke, Superintendent of the Indiana Board and Filler Company, has resigned to go with the Pioneer Paper Company, of Los Angeles, Cal. His place has been filled by the promotion of Roy Lopshire, of the same organization.

Imports and Exports of Paper and Paper Stock

(Continued from page 64)

First Nat'l Bank of Boston, by same, 114 bls. rags.

New England Waste Co., I. Florio, Palermo, 163 bls. cotton waste.

Katzenstein & Keene, Inc., Bolivian, London, 67 bls. rags.

Crocker, Burbank Co., by same, 371 bls. waste paper.

Train, Smith & Co., Belgian, Liverpool, 167 bls. waste paper.

G. M. Graves & Co., by same, 30 bls. rags.

E. Butterworth Co., Inc., by same, 87 bls. waste paper.

C. H. Dexter & Son., by same, 56 bls. new cuttings.

Ladenburg, Thalman & Co., by same, 68 bls. rags.

Meredith Linen Mills, Norwegian, Liverpool, 92 bls. flax waste.

E. Butterworth & Co., Inc., by same, 159 bls. flax waste.

E. Butterworth & Co., Inc., by same, 7 bls. rags.

E. Butterworth & Co., Inc., Nessian, Liverpool, 263 bls. paper stock.

Train, Smith & Co., by same, 74 bls. rags.

True & McClelland, by same, 64 bls. waste paper.

HIDE CUTTINGS

E. F. Russ & Co., Nessian, Manchester, 1,172 bags.

Train, Smith & Co., by same, 218 bags.

E. Butterworth & Co., Inc., by same, 1,263.

PHILADELPHIA IMPORTS

WEEK ENDING JUNE 9, 1923

WOOD PULP

Castle & Overton, Pr. Harding, Bremen, 1,535 bls.

Castle & Overton, Bradclyde, Hamburg, 550 bls.

Castle & Overton, Hamelin, Hamburg, 986 bls.

RAGS, BAGGING, ETC.

Castle & Overton, Manchester Importer, Manchester, 297 bls. rags.

Castle & Overton, Bradclyde, Hamburg, 232 bls. rags.

E. J. Keller Co., Inc., by same, 1,772 bls. rags.

L. H. Abenheimer, by same, 304 bls. rags.

Castle & Overton, Sarcoixie, St. Nazaire, 667 bls. rags.

E. J. Keller Co., Inc., by same, 659 bls. rags.

New York Trust Co., by same, 763 bls. rags.

W. Schall & Co., Sarcoixie, Bordeaux, 271 bls. rags.

OLD ROPE

Bemis Bros. Bag Co., Hordis, Genoa, 90 coils.

Old Colony Trust Co., Bristol City, Bristol, 64 coils.

BALTIMORE IMPORTS

WEEK ENDING JUNE 9, 1923

R. F. Hammond, Inc., Ivar Graeker, 500 bls., 100 tons wood pulp.

Certaineed Products Corp., W. Cawthorn, Marseilles, 1,200 bls. rags.

L. H. Abenheimer, Olen, Havre, 217 bls. rags.

NEW ORLEANS IMPORTS

WEEK ENDING JUNE 9, 1923

E. J. Keller Co., Inc., West Kasson, Antwerp, 372 bls. bagging.

RUMORS OF BIG PAPER MERGER CONTINUE IN MONTREAL

(Continued from page 36)

the shareholders will be on something like the following basis:

To unsecured creditors \$720 of prior preferred stock and 30 shares of common for \$600 cash and the surrender of \$1,000 of claims against the company.

To holders of first preferred stock, \$720 of prior preferred and 30 shares of common for \$600 cash and the surrender of 10 shares of the present stock.

To the second preferred shareholders, \$720 of prior preferred stock and 18 shares of common for \$600 cash and the surrender of 24 shares of their stock.

To holders of common, \$720 of prior preferred stock and 9 shares of common for the payment of \$600 cash and the surrender of 120 shares of common stock.

After it is determined to what extent the present shareholders and unsecured creditors will subscribe, it will be determined what the nature of the public offering will be.

The Proposed Embargo on Pulpwood

While there is a good deal of discussion on the proposed embargo on the export of pulpwood cut on freehold lands in Canada, the opinions expressed are not all favorable. For instance, the *Financial Post* says that it is not a live subject for public discussion either in the United States or Canada and that there are many other concessions Canada might give the United States that would be better objects with which to bargain for reciprocity, if the proposed embargo was put forward by Mr. Fielding with a view to reciprocity negotiations. The paper goes on to state that statistics indicate that there has been very little increase in the export of pulpwood from Canada. The amount exported in 1922 was practically the same as in 1914 and in the intervening years there was considerable fluctuation in the annual amount. This has been due to the concentration in Canada of pulp and paper mills, mostly controlled by American capital, that has taken time by the forelock and established a policy of completing the manufacture of the pulpwood in Canada. It will be seen from the following figures that while the output of pulp and paper in Canada has grown tremendously since 1914, the annual exports of pulpwood in the unfinished state have not increased at all. For purposes of comparison printing paper, chiefly news print, is taken as indicative of the pulp and paper field in general.

	Pulpwood Cords	Printing Paper Tons
1914	1,089,384	294,578
1915	1,010,914	364,602
1916	879,934	463,204
1917	982,671	540,309
1918	1,002,127	605,093
1919	1,597,042	662,426
1920	838,732	713,620
1921	1,615,467	750,629
1922	825,967	750,691
1923	1,096,462	1,006,230

The *Financial Post* adds: "It is generally hoped that Mr. Fielding's investigation will not put the question into the field of politics. To put an export duty on wood would probably have this effect in bringing it into the area where reprisals by the United States might follow."

Boston Market Less Active

[FROM OUR REGULAR CORRESPONDENT.]

BOSTON, Mass., June 13, 1923.—There are varied opinions as to the conditions in the local paper market. While there exists an opinion that business has fallen off slightly, yet there are equally as many opinions from members of local trade stating that business is what might be expected at this time.

There is no real pessimistic sentiment existing and the trade generally points to the great increase in business the first five months of this year over a similar five months' period of a year ago as indicating a satisfactory situation.

Concerns dealing in industrial equipment and supplies state their business has increased and they are at present busy supplying requirements in various industries, the increase of the business of one concern being stated as 86 per cent over that of similar period of a year ago, all of which would indicate that the industrial situation generally is in good condition.

Conditions are no different regarding volume of orders than has been true of previous summer periods. Prices are firm and there is no apparent desire to force the market.



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Liquid Chlorine puts saving simplicity into all bleaching operations. It settles rapidly with little sludge loss; increases bleach production with no additional equipment; produces standard strength solutions; no loss of chlorine in transportation; operating conditions simple and agreeable.

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Miscellaneous Markets

OFFICE OF THE PAPER TRADE JOURNAL,
WEDNESDAY, JUNE 13, 1923.

There is a general tendency on the part of consumers to hold off until there is a reduction in price, but chemical dealers do not believe that any but a very sharp downward revision would bring any business to them and they are inclined to let quotations stay as they are.

BLEACHING POWDER.—Bleach still remains one of the most unstable products on the market because of the difficulty of storing it in the warm months. There is little activity on the part of buyers, but the price remains the same as last week at from 1.75 to 1.85 cents a pound.

CHINA CLAY.—Although there has been a continued slacking of the demand for china clay dealers and importers are not showing any inclination to revise prices which will probably remain at the same level for some time to come. The domestic grade is now quoted at from \$14 to \$17 a ton and the foreign at from \$15 to \$23 a ton depending upon the grade required.

BLANC FIXE.—Although blanc fixe is suffering along with the rest of the chemicals from the usual summer dullness, it has not shown any signs of becoming any cheaper nor is there much prospect of its doing so. It depends largely on the paint manufacturers rather than the paper men for its largest market and the summer is usually a good season with the former. The price is still firm at \$50 to \$55 a ton on the pulp grades and \$85 to \$86 on the dry.

CAUSTIC SODA.—Paper men did not show much interest in caustic soda during the week that has just passed. It is said that the mills have good supplies on hand at present and that they are not disposed to come into the market for two or three weeks. Dealers are keeping the price firm at 2.50 cents a pound on the basis of sixty per cent.

CASEIN.—There was little demand for casein in the open market during the week and contracts are mostly taken up for the next month. Apparently the paper manufacturers are well stocked and do not feel that the present is an advantageous time to buy for the future. The price is being held firmly at 17 to 18 cents a pound.

LIQUID CHLORINE.—No change was reported in the liquid chlorine market during the week. There was not much demand and there is little indication that the mills require any for the present. The price remains firm at 4.50 to 5.30 cents a pound.

ROSIN.—Naval stores have not shown any signs of picking up. They are still in poor demand but dealers are sure that the mills will not be able to hold off much longer. Prices on the grades of interest to paper makers remained at 6.10 to 6.15 cents a pound.

SALTCAKE.—Standard saltcake is still moving slowly on the open market. There is practically no demand for spot goods in New York although there are a few contracts being filled from time to time. The price is \$25 to \$27 a ton.

SATIN WHITE.—Although the demand for satin white is no brisker dealers say that it is better than most of the other chemicals at the present time. There is no indication that the price, 1.50 to 2.00 cents a pound will change.

SODA ASH.—The movement of soda ash was slow during the week. Paper mills seem still to be inclined to wait for a revised price which has failed to come as yet, however. It is still quoted at 2.20 cents a pound on a 48 per cent. basis.

STARCH.—There has been no change in the dull demand for starch during the past week. In the open market the trading has dwindled to the summer minimum so far as paper mills are concerned and the price remains firm at from 2.80 to 3.10 cents a pound.

SULPHATE OF ALUMINA.—Alumina sulphate remains in the doldrums with related chemicals. There is only a small demand for it in the open market and little is moving on contract. The price remains the same with the iron free grade at from 2.15 to 2.40 and the commercial at 1.35 to 1.45 cents a pound.

Market Quotations

(Continued from page 68)

No. 1 Mixed	1.60	1.75	New Blue	.02 1/2	.02 1/2
No. 2 Mixed	1.25	1.50	New Black Soft	.06 1/2	.06 1/2
Solid Ledger Stock	2.50	2.75	New Light Sec-		
Writing Paper	2.25	2.50	onds	.02 1/2	.02 1/2
No. 1 Books, heavy	2.00	2.25	Khaki Cuttings	.11	.04 1/2
No. 2 Books, light	1.40	1.50	Corduroy	.03 1/2	.04
No. 1 New Manila	2.75	3.00	New Canvas	.08 1/2	.08 1/2
No. 1 Old Manila	1.50	1.75	New Black Mixed	.04	
Container Manila	1.35	1.50	Old		
Old Kraft	2.25	2.50	White, No. 1—		
Overissue News	1.50	1.60	Repacked	.06	.06 1/2
Old Newspaper	1.00	1.50	Miscellaneous	.04 1/2	.04 1/2
No. 1 Mixer Paper	1.00	1.10	White, No. 2—		
Common Paper	.80	.90	Repacked	.03 1/2	.04
Straw Board, Chip	1.00	1.10	Miscellaneous	.03	.03 1/2
Binders Bd., Chip	1.00	1.10	Thirds and Blues—		
Domestic Rags—New			Repacked	2.00	2.25
Price to Mill, f. o. b. Phila.			Miscellaneous	1.85	1.90
Shirt Cuttings—			Black Stockings	2.75	3.00
New White, No. 1	.12	.12 1/2	Roofing Stock—		
New White, No. 2	.07		No. 1	1.35	1.40
Silicias, No. 1	.07 1/2	.07 3/4	No. 2	1.25	1.30
New unbleached	.10	.11	No. 3	1.15	1.20
Washables	.04 1/2		No. 4	1.15	1.20
Fancy	.05 1/2	.05 3/4	No. 5A	1.10	
Cottons—according to grades—			B		nominal
Blue Overall	.05 1/2	.05 3/4	C		nominal

BOSTON

[FROM OUR REGULAR CORRESPONDENT.]

Paper		Filed News Board	65.00	
Bonds	.09 1/2	Solid News Board	75.00	@ 80.00
Ledgers	.09 1/2	S. Manila Chip	75.00	@ 80.00
Writings	.08 1/2	Pat. Coated	90.00	@ 105.00
Superfine	.16	Old Papers		
Fine	.15	Shavings—		
Books, S. & S. C.	.07 1/2	No. 1 Hard White	4.15	@ 4.25
Books, M. F.	.06 3/4	No. 1 Soft White	3.35	@ 3.50
Books, coated	.09	No. 1 Mixed	.90	@ 2.25
Label	.09	Ledgers & Writing	2.00	@ 2.25
News, sheets	4.75	Solid Books	1.75	@ 1.90
News, rolls	4.50	Blanks	1.25	@ 1.50
Manilas—		No. 2 Light Books	1.50	@
No. 1 Manila	\$6.00	Folded News, over-		
No. 1 Fiber	.06 1/2	issues	1.00	@
No. 1 Jute	9.00	Gunny Paggung	1.15	@ 1.25
Kraft Wrapping	.07	Manila Rope	6.25	@ 6.50
Common Bogus	3.50	Common Paper	1.00	@
Boards		Common Mixed	.70	@ .75
(Per Ton Destination)		Old News	.80	@ .90
Chip	\$62.50	Old Kraft	1.90	@ 2.10
News, Vat Lined	65.00	No. 1 Scrap Burlap	.90	@ 1.00
Wood, Vat Lined	72.50	No. 2 Roofing Bagging	.60	@ .70
		Mixed Strings, 1 cent per lb.		

TORONTO

[FROM OUR REGULAR CORRESPONDENT.]

Paper		Sulphite, bleached	90.00	@ 95.00
(Mill Prices to Jobbers f. o. b. Mill)		Sulphate	70.00	@ 72.50
Bond—		Old Waste Papers		
Sulphite	.11	(In carload lots, f. o. b. Toronto)		
Light tinted	.12	Shavings—		
Dark Tinted	.13 1/2	White Env. Cut	3.90	@
Ledgers (sulphite)	.13	Soft White Book		
Writing	.09 1/2	shavings	3.40	@
News, f. o. b. Mills—		White Bk. News	2.00	@ 2.10
Rolls (carloads)	3.75	Book and Ledger—		
Sheets (carloads)	4.50	Flat Magazine and		
Sheets (2 tons or		Book Stock (old)	1.80	@
over)	4.75	Light and Crum-		
Books—		pled Book Stock	1.65	@
No. 1 M. F. (car-	9.00	Ledgers and Writ-		
loads)		ings	2.00	@
No. 2 M. F. (car-	8.00	Solid Ledgers	2.00	@
loads)		Manilas—		
No. 3 M. F. (car-	7.50	New Manila Cut	2.10	@
loads)		Printed Manilas	1.85	@
No. 1 S. C. (car-	9.50	Kraft	2.50	@
loads)		News and Scrap—		
No. 2 S. C. (car-	8.50	Strictly Overissue	1.30	@
loads)		Folded News	1.30	@
No. 1 Coated and	14.00	No. 1 Mixed Pa-		
litho		pers	1.00	@
No. 2 Coated and	13.00	Domestic Rags—		
litho		Price to mills, f. o. b. Toronto		
No. 3 Coated and	12.25	Per lb.		
litho		No. 1 White shirt		
Coated and litho,	14.25	cuttings	12	@
colored		No. 2 White shirt		
Wrapping—		cuttings	.06	@
Grey	5.00	Fancy shirt cut-		
White Wrap	5.75	tings	.05 1/2	@
"B" Manila	6.00	No. 1 Old Whites	.04 1/2	@
No. 1 Manila	7.25	Third and blues	.02 1/2	@ .02 1/2
Fiber	7.25	Per cwt		
Kraft, M. F.	8.00	Black stockings	.03	@
M. G.	8.15	Roofing stock:		
Pulp		No. 1		@
(F. o. b. Mill)		No. 2		@
Ground wood	\$36.00	Roofing stock:		
Sulphite easy bleach-	65.00	No. 1		@
ing		No. 2		@
Sulphite news grades	55.00	Manila rope	.05 1/2	@
		No. 2	1.55	@
		Gunny bagging	.01 1/2	@