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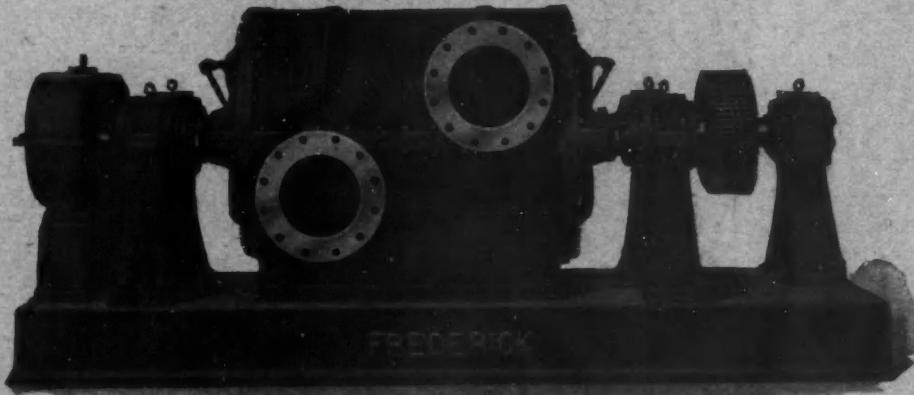
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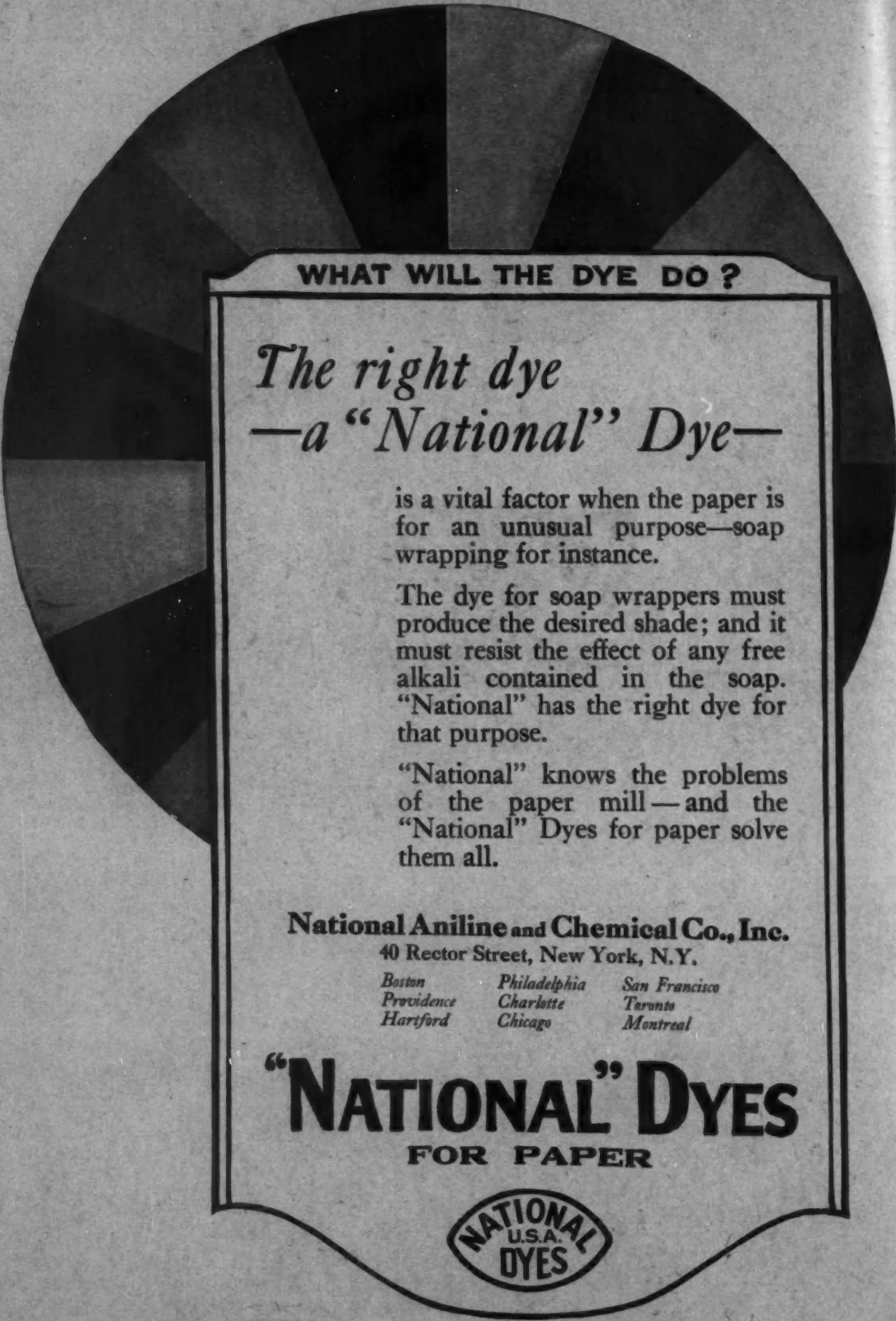
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“NATIONAL” DYES
FOR PAPER



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The International Weekly of the Paper and Pulp Industry and the Pioneer Publication in its field

FIFTY-FIRST YEAR

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Thursday, May 10, 1923

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PRODUCTIONS OF ALL PAPERS DURING MONTH OF MARCH

According to Statistics Just Issued by the Federal Trade Commission the Stock on Hand at the Mills at the End of the Month Equaled Five Days' Average Output of News Print, Eleven Days' Average Output of Book Paper, Eighteen Days' Average Output of Wrapping Paper, Thirty-three Days' Average Output of Fine Paper and Fifteen Days' Output of Tissue Paper.

[FROM OUR REGULAR CORRESPONDENT.]

WASHINGTON, D. C., May 9, 1923.—The tabulation presented herewith 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 March, 1923. The deficiency in the number of returns for March has made it advisable to eliminate the statistics for paper board, box board and bag paper for this month. The figures reported are shown below for the other specified grades. This summary is compared with the month of March, 1918 to 1922, inclusive. Import and export statistics for December, 1922, 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 February and March, 1921, 1922 and 1923, in news print, book paper, wrapping and fine paper.

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 and 1922, inclusive.

Production Classified

The production has been classified for convenience into 9 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 body of the tonnage tables in the number of mills.

For each grade 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 March, 1923, compared with March, 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):					
March, 1923.....	73	23,197	129,294	132,292	20,199
March, 1922.....	78	27,815	117,507	117,142	28,180
March, 1921.....	85	39,176	107,532	104,919	41,789
March, 1920.....	90	27,955	127,847	128,238	27,564
March, 1919.....	68	25,471	114,746	108,285	31,932
March, 1918.....	66	28,014	105,700	106,730	26,984
Average.....	...	...	120,366	...	24,813
Standard News:					
March, 1923.....	60	18,191	117,075	119,768	15,498
March, 1922.....	65	22,898	110,061	109,661	23,298
March, 1921.....	67	33,293	98,190	95,960	35,517
March, 1920.....	76	24,795	119,152	118,843	25,104
March, 1919.....	51	19,543	104,497	99,171	24,859
March, 1918.....	50	24,886	95,471	99,658	20,699
Average.....	...	...	109,512	...	20,368

Book (M. F., S. S. C. and Coated):					
March, 1923.....	87	33,114	96,087	97,721	31,480
March, 1922.....	88	39,334	77,889	78,856	38,367
March, 1921.....	95	33,587	59,832	55,698	37,721
March, 1920.....	94	28,434	95,851	99,789	24,496
March, 1919.....	89	32,784	63,699	63,660	32,823
March, 1918.....	89	28,358	74,219	74,923	27,654
Average.....	...	...	80,757	...	31,889
Wrapping (Kraft, Manila, Fibre, etc.):					
March, 1923.....	132	45,185	86,776	88,748	43,213
March, 1922.....	152	59,251	70,141	64,461	64,931
March, 1921.....	145	51,276	49,879	43,619	37,536
March, 1920.....	152	31,453	68,403	69,565	30,291
March, 1919.....	160	59,552	48,069	36,383	71,238
March, 1918.....	160	36,437	59,884	60,978	35,343
Average.....	...	...	65,799	...	47,015
Fine (Writing, Bonds, Ledgers, etc.):					
March, 1923.....	99	38,511	35,144	36,677	36,978
March, 1922.....	104	35,804	29,346	30,027	35,123
March, 1921.....	108	37,397	19,058	17,100	39,355
March, 1920.....	116	32,260	35,671	35,720	30,211
March, 1919.....	108	37,623	23,514	23,318	37,819
March, 1918.....	108	25,352	28,865	30,690	23,527
Average.....	...	...	30,078	...	33,880
Tissue (Toilet, Crepe, Fruit Wrappers, etc.):					
March, 1923.....	83	7,666	16,224	15,917	7,973
March, 1922.....	99	8,023	17,965	17,354	8,634
March, 1921.....	97	8,854	10,760	10,889	8,725
March, 1920.....	101	6,784	15,363	16,150	5,997
March, 1919.....	86	7,467	10,575	9,841	8,141
March, 1918.....	86	5,977	12,017	13,594	4,400
Average.....	...	...	14,499	...	7,083
Hanging (No. 2 Blank, Oatmeal, Tile, etc.):					
March, 1923.....	20	2,615	9,345	9,450	2,510
March, 1922.....	26	2,611	8,919	9,209	5,321
March, 1921.....	25	7,403	5,715	3,804	9,314
March, 1920.....	24	1,538	10,047	10,304	1,281
March, 1919.....	19	2,558	8,774	8,113	3,219
March, 1918.....	19	6,176	4,304	5,556	4,925
Average.....	...	...	7,614	...	4,823
Felts and Building (Roofing, Sheathing, etc.):					
March, 1923.....	46	9,242	40,698	42,653	7,287
March, 1922.....	50	11,664	32,164	31,491	12,337
March, 1921.....	54	11,979	23,375	23,725	11,629
March, 1920.....	54	8,535	37,473	38,404	7,604
March, 1919.....	45	8,596	14,014	14,782	7,828
March, 1918.....	45	8,239	25,442	25,779	7,902
Average.....	...	...	28,944	...	8,983
Miscellaneous Grades: *					
March, 1923.....	97	21,699	29,063	29,857	20,905
March, 1922.....	104	19,863	29,035	27,968	20,930
March, 1921.....	94	19,535	16,218	15,671	20,082
March, 1920.....	89	14,935	26,071	25,976	15,030
March, 1919.....	64	11,580	14,591	13,002	13,169
March, 1918.....	64	13,058	23,214	27,877	8,395
Average.....	...	...	23,085	...	15,663

* Includes grades of paper not otherwise classified, except paper board, box-board and bag.

Paper on Hand

The following stocks were reported on hand at terminal and delivery points on March 31, in addition to the mill stocks shown in the tabulation: Book Paper, 17 tons, and Fine, 183 tons.

Stocks of all grades, except Tissue, decreased during the month.

Ratio of Stocks to Average Production

Comparing the stocks on hand at the domestic mills on March 31 with their average daily production, based upon the combined production for 1918 to 1922, inclusive, the figures show that:

- News print paper stocks equal 5 days' average output.
- Book paper mill stocks equal 11 days' average output.
- Wrapping paper mill stocks equal 18 days' average output
- Fine paper mill stocks equal 33 days' average output.
- Tissue paper mill stocks equal 15 days' average output.
- Hanging paper mill stocks equal 9 days' average output.
- Felts and building paper mill stocks equal 7 days' average output.

Tonnage of Identical Mills

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

		(Net tons, 2,000 lbs.)				
		Number of Identical mills	Stock first of month	Production	Shipments	Stock end of month
News Print:						
February, 1923	71	22,866	112,621	112,431	23,056	
March, 1923	71	23,056	127,995	130,921	20,130	
February, 1922	71	26,698	97,675	96,807	27,566	
March, 1922	71	27,566	118,503	117,682	28,387	
February, 1921	71	30,863	100,355	93,559	37,659	
March, 1921	71	37,659	106,157	103,421	40,395	
Book:						
February, 1923	77	33,030	81,100	81,734	32,396	
March, 1923	77	32,396	94,570	96,430	30,536	
February, 1922	77	34,944	64,927	63,556	36,315	
March, 1922	77	36,315	73,164	74,130	35,349	
February, 1921	77	24,975	51,666	47,450	29,191	
March, 1921	77	29,191	55,139	50,674	33,656	
Wrapping:						
February, 1923	93	42,477	68,466	68,933	42,010	
March, 1923	93	42,010	78,348	80,612	39,746	
February, 1922	93	49,285	54,833	51,404	52,714	
March, 1922	93	52,714	61,813	57,512	57,015	
February, 1921	93	40,711	41,248	34,796	47,163	
March, 1921	93	47,163	45,397	39,964	52,596	
Fine:						
February, 1923	72	33,721	28,841	27,938	34,624	
March, 1923	72	34,624	32,227	33,965	32,886	
February, 1922	72	29,864	23,376	23,332	29,908	
March, 1922	72	29,908	25,846	26,075	29,679	
February, 1921	72	27,841	16,975	12,712	32,104	
March, 1921	72	32,104	16,764	15,106	33,762	

Imports and Exports

The imports and exports for all grades of paper for December, 1922, compared with December, 1921, as shown by the records of the Department of Commerce, were as follows:

	December, 1922		December, 1921	
	Pounds	Value	Pounds	Value
Imports:				
News print	196,988,921	\$6,970,938	159,326,394	\$6,080,650
Book paper	1,219,357	62,505	11,259	942
Paperboard	6,538,833	166,788	3,450,491	86,409
Wrapping paper	7,636,555	368,376	1,653,014	62,941
Hanging paper	.....	50,678	.....	25,779
All other grades (a)	.....	306,041	.....	214,440
Exports:				
News print	4,117,241	196,834	3,180,131	141,700
Book paper	3,026,052	304,862	1,506,676	163,829
Paperboard	4,500,601	241,481	.....	163,444
Wrapping paper	2,884,760	226,816	2,246,479	161,425
Bag	.....	71,522	.....	70,890
Fine	.....	141,866	.....	172,134
Tissue	.....	149,597	.....	81,308
Hanging	.....	30,476	.....	23,609
All other grades (a)	.....	404,321	.....	392,068
Total imports	.....	\$7,253,325	.....	\$6,471,161
Total exports	.....	1,767,775	.....	1,370,407

(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 December, 1922, was about 3 per cent of the imports.

The value of the total imports of all grades was about 7 per cent less than for November.

The value of the total exports for December, 1922, was less than the imports by \$5,485,550 and was \$397,368 more than the exports for December, 1921.

As to value, the principal grades exported were book, paper-board, wrapping, news print and tissues.

Loss of Production

The idle machine time reported to the Commission for March, 1923, is shown by grades in the attached tabulation.

The number of machines includes only those machines for which idle time was reported during the month. It does not include the machines in 5 reporting mills that were closed down completely for the month.

The total number of machines may include duplications because the reports may count the same machines twice, if idle for different reasons during different parts of the month, or if idle part of the time on one grade and part of the time on another.

The reasons tabulated for lost time are "lack of orders" and "repairs." "Other reasons" include "lack of material," "lack of water power," etc.

The time lost in March, 1922, is given by grades and reasons, for purposes of comparison.

Dr. Rawling Joins Forest Products Laboratory

[FROM OUR REGULAR CORRESPONDENT.]

MADISON, Wis., May 7, 1923.—Dr. Francis G. Rawling, Luke, Md., has joined the section of pulp and paper at the United States Forest Products Laboratory. He will assist with alkaline pulping process investigations and numerous other problems.

Dr. Rawling was formerly with the West Virginia Pulp and Paper Company. He is a graduate of Leeds University, England, where he received the degrees of Bachelor of Science, Master of Science, and Doctor of Science.

He was an instructor in chemistry at the University of Edinburgh, Scotland.

After passing the examination for associateship to the Institute of Chemistry of Great Britain and Ireland Dr. Rawling was made a Fellow of the Institute. Dr. Rawling has been with the West Virginia Pulp and Paper Company as a research chemist and chemical engineer since 1913.

Loss of Production

MONTH OF MARCH, 1923, (WITH MARCH, 1922, FOR COMPARISON)

	Lack of orders		Repairs		Other reasons		Total	
	1923	1922	1923	1922	1923	1922	1923	1922
	News Print:							
Number of machines	.....	13	12	8	39	10	51	31
Total hours idle	.....	2,856	759	220	4,173	719	4,932	3,795
Book Paper:								
Number of machines	23	112	39	10	29	28	91	150
Total hours idle	3,298	15,551	4,169	674	2,151	2,180	9,618	18,405
Wrapping:								
Number of machines	5	53	25	35	40	36	70	124
Total hours idle	1,360	6,125	2,643	2,465	5,443	5,277	9,446	13,867
Fine:								
Number of machines	47	39	15	9	47	64	109	112
Total hours idle	12,194	11,857	1,234	1,362	5,560	9,326	18,988	22,545
Tissue:								
Number of machines	9	36	25	34	43	24	77	94
Total hours idle	1,818	5,917	2,244	2,312	3,755	2,785	7,817	11,014
Hanging:								
Number of machines	1	14	1	6	6	2	8	22
Total hours idle	58	1,873	2	129	585	103	645	2,105
Felts and Building:								
Number of machines	4	30	5	18	16	15	25	63
Total hours idle	1,394	4,398	752	1,185	2,278	1,164	4,424	6,747
Miscellaneous Grades:								
Number of machines	1	48	19	9	26	20	46	77
Total hours idle	76	7,648	2,987	317	6,773	3,115	9,836	11,080
Total number of machines	90	345	141	129	246	199	477	673
Total hours idle	20,198	56,225	14,790	8,664	30,718	24,669	65,706	89,558

PAPER PLANTS IN MAINE DAMAGED BY BIG FLOODS

Heavy Rains Melt Snow in Forests Suddenly and Cause Most Disastrous Floods in History of State—Great Northern Paper Co., International Paper Co. and Other Representative Pulp and Paper Concerns Suffer Damages Estimated at Many Thousands of Dollars—Paper Mill Men Express Dissatisfaction Because of Failure to Build Dam on the Kennebec River.

[FROM OUR REGULAR CORRESPONDENT]

BANGOR, Me., May 7, 1923.—Maine paper mills sustained a greater loss from floods last week than ever before in their history. Machinery was inundated, plants closed, thousands of cords of pulpwood floated out to sea, shipments delayed, men thrown out of work, bridges swept away and numerous other losses caused all over the state due to the rapid rising of the rivers. The flood, which was the worst within recollection of the oldest inhabitant, resulted from a combination of the largest snowfall in many years with several days of driving rainstorm which caused the snow in the forests to turn suddenly into water and run into the rivers all at once.

Loss Estimated at \$3,000,000

Trouble began early in the week, with a rapid rising of the waters on the Kennebec, Penobscot, Union, Pleasant, Piscataquis and St. Croix rivers. The total loss to all property owners was estimated at \$3,000,000, making it Maine's most disastrous flood.

At Lake Moxie, a dam owned by the Great Northern Paper Company was swept out. The Howland Pulp and Paper Company lost its Ebeemee pond dam near Brownville Junction. The dam at Katahdin Iron Works on the Pleasant river was swept out and with it several hundred thousand cords of pulpwood destined for the Advance Bag and Paper Company, at Howland. Over 7,000 cords of pulpwood were washed away at Island Falls. Some 10,000 cords of pulpwood went adrift at Riley, when the boom of the International Paper Company broke away in the flood, the value of the wood being more than \$200,000.

Heavy Damage at Orono

At Orono the International Paper Company lost its bridge and pipe line connecting the groundwood and paper mills. Manager John H. Stinchfield hauled the pulp in trucks from mill to mill across the Stillwater highway bridge, a half mile up the river. At Pea Cove logs destined for the Eastern Manufacturing Company, Orono Pulp and Paper Company and Penobscot Chemical Fiber Company were released. The bridge connecting the mill of the Orono Pulp and Paper Company with the mainland at Orono was swept away.

Big Boom at Brown's Island Breaks

The big boom at Brown's Island, near Hollowell on the Kennebec river, broke twice during the flood, allowing 20,000 cords of pulpwood, worth more than \$300,000, belonging to the Hollingsworth & Whitney Paper Company to float out to sea.

The grinder room of the International Paper Company at Livermore Falls was under 25 feet of water during the flood, causing much damage to the machines. At Madison the generating room of the Great Northern Paper Company was flooded. Two million feet of logs were swept away on the Union river at Ellsworth, when a section of the storage dam, recently completed at a cost of \$200,000, was swept away.

Ripogenus Dam Prevents Greater Damage

Undoubtedly more damage would have occurred on the Penobscot river had it not been for the immense storage dam at Ripogenus, erected by the Great Northern Paper Company eight years ago,

holding back billions of gallons of water. The paper mill men on the Kennebec, who, with other power users on the river, petitioned the state for permission to erect a similar storage reservoir at Dead River on the Kennebec, are indignant at the short-sighted policy of the governor, who made a successful fight against granting of a charter to build this reservoir. It is probable that a campaign will be started all over the State for the erection of storage dams to prevent such catastrophes in the future.

Plans for Superintendents' Meeting at Springfield

[FROM OUR REGULAR CORRESPONDENT.]

HOLYOKE, Mass., May 6, 1923.—Plans were made Friday night at a meeting of the Connecticut Valley Division of the International Paper and Pulp Mills Superintendents' Association for the national convention of the American Pulp and Paper Mills Superintendents' Association at Springfield, Mass., May 31 and June 1-2. Chairman John J. White, who presided, said that one day would be given to visitation of Holyoke mills and probably a trip to Mt. Tom. There were forty in attendance at the meeting which was held at the Nonotuck Hotel, preceded by a dinner, a percentage of about 75 per cent of the membership. Chairman White took this to be a favorable augury for the success of the convention.

It was announced that the Connecticut Valley Division would be the guest of the Superintendents of the Fitchburg Paper Mills some date between August 15 and August 20. In October the Valley Division will be the guests of the Berkshire superintendents, the trip being made by automobile in both cases.

Addresses were given by Attorney E. Mark Sullivan, Boston corporation counsel, and by Mr. Marshal, inventor of the Marshal engine. These convention committees were announced: General, J. H. O'Connell, chairman; E. T. A. Coughlin, F. C. Boyce, A. O. Rolfe, Miss P. C. Barrett, Peter J. Massey, H. H. Hackett, Homer Stafford, J. E. Madore; arrangements, John J. White (chairman), C. H. Kent, Miss P. C. Barrett, T. F. Rogan, James P. Bartley, Alexander Cassie, F. L. Barstow; reception, C. C. Stewart (chairman), James Geraghty, John J. Kennedy, Roger McCorkindale, H. C. Parsons, C. A. Tift, E. G. Ham, Daniel Schwartz, R. J. Stevens, J. E. Madore; resolutions, E. T. A. Coughlin (chairman), Ernest Bush, W. H. Croft, A. W. Bronk, Joseph Bario, John Leishmann, A. F. Barnett, William Dalrymple, C. W. Mooney, Thomas Duff; registration, C. H. Kent (chairman), E. F. Driscoll, Fred Glanville, George H. Hancock, Isaac Allen, A. B. C. Drew, R. B. Livermore, Arthur Lowe, William McKay, G. W. Mericle, H. C. Cassidy; transportation, Edward Rex (chairman), George Raynor, Stephen Smith, George Stephens, Maurice Whalen, J. B. White, H. W. Knight, John Johnson, Michael Kelly, F. T. Mooney, Thomas Keough; visitation of mills, James P. Wright, J. S. Whitney, Forbes Wood, Joseph Zollicker, C. H. Champion, R. W. Stephens and E. H. Gibbins.

Hanlon Paper Co. Opens at Huntington

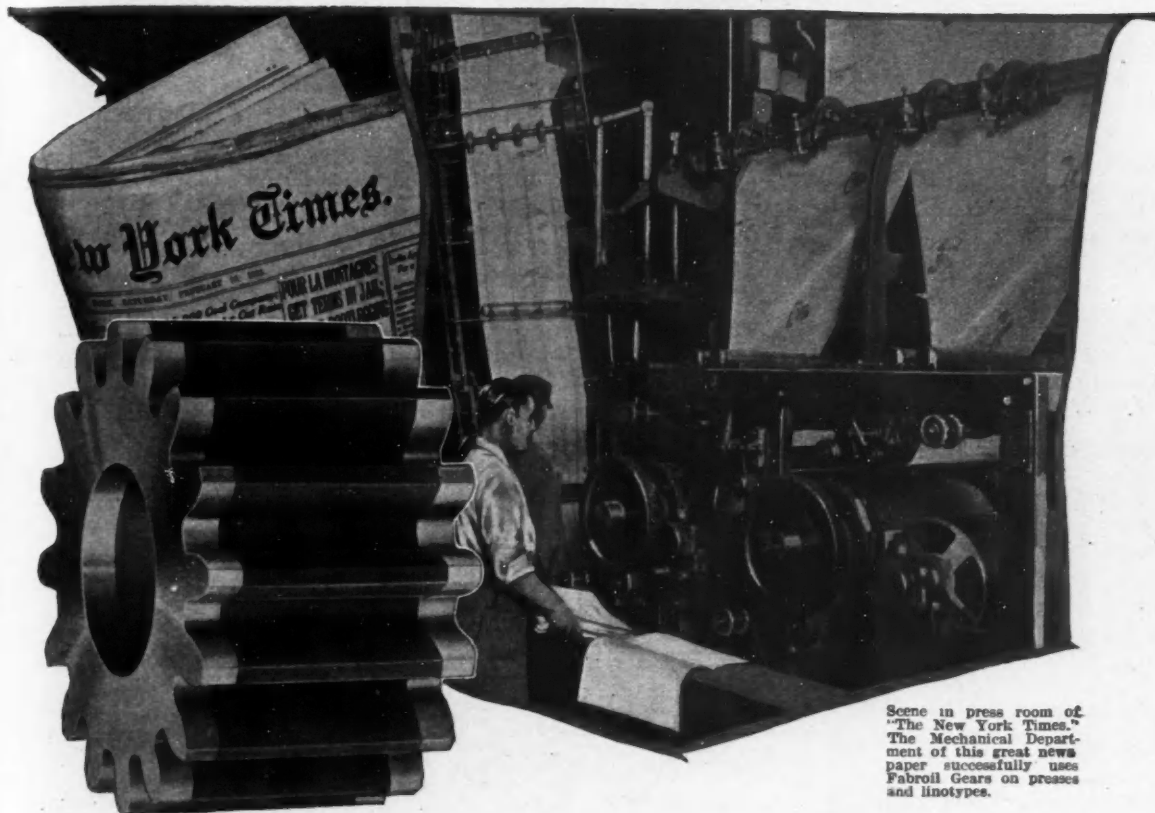
[FROM OUR REGULAR CORRESPONDENT.]

HUNTINGTON, W. Va., May 7, 1923.—The Hanlon Paper Company, Barnesville, Ohio, has opened a branch office and warehouse at 843 Second avenue where it will carry a complete line of coarse wrapping papers, paper bags, toilet papers, twine, etc. F. C. Hibbard, secretary-treasurer of the company will have charge of the Huntington Branch.

This company has been established in Barnesville, Ohio, for many years, working over a territory comprising eastern Ohio, western Pennsylvania and West Virginia. Last year O. O. Hanlon, president of the company celebrated his fiftieth year in the paper business.

In addition to warehouse at Barnesville, Ohio, a large printing plant is maintained, which is devoted to the printing of roll and sheet paper and paper bags.

Great Newspapers Use Fabroil Gears



Scene in press room of "The New York Times." The Mechanical Department of this great newspaper successfully uses Fabroil Gears on presses and linotypes.

Fabroil Gears are not affected by dry or moist conditions; they are made from 1 to 36 inches in diameter and are adapted to a wide variety of uses in printing plants.

Our nearest Sales Office will gladly give you full information.

Fabroil Gears are the Cord tires of the printing press—they reduce vibration, lessen shocks, make quiet running and lengthen the life of the machine.

Manufacturers of presses—that print great metropolitan dailies, magazines of national circulation and catalogs of enormous runs—equip their presses with Fabroil Gears.

And progressive printing plants are substituting Fabroil Gears for metal gears on present equipment.

General  Electric Company
 General Office Schenectady, N.Y. Sales Offices in all large cities

WESTERN BOARD & PAPER CO. TO MAKE LARGE EXPANSION

Present Mill Proper Will Be Enlarged and Board Machine Will Have Additions of 36 Dryers and Two Cylinders, Making Seven Cylinders in All—Considerable Other Additional Equipment Also Will Be Installed—Kalamazoo Paper Co. Builds Large Storage House for China Clay Near Riverview Coated Division—Kalamazoo Boy Scouts To Collect Waste Paper.

[FROM OUR REGULAR CORRESPONDENT.]

KALAMAZOO, Mich., May 7, 1923.—An expansion program that will increase the annual production capacity of the Western Board and Paper Company's mill from 15,000 to 25,000 tons of finished board is announced by Winship A. Hodge, general manager of the company.

The work has already started and will include enlargement of the present mill proper, rebuilding the machine, additional auxiliary equipment and enlarged power house capacity. This work has been so well laid out that it will not be necessary to shut down the mill, except for a brief period of three weeks, in October, when the actual rebuilding of the board machine is in progress.

The mill addition is now being erected at the north end of the mill and will be 51 by 60 feet in dimensions. Half this structure will allow for enlargement of the present machine room, while the other portion will be two stories high and be used for offices above and a storage and finishing room below. This building will be of concrete, steel and brick and is being erected on land purchased from the Kalamazoo Paper Company.

New Equipment to Be Installed

The present board machine, Beloit built, 104 inches wide and trimming 99 inches, is to be expanded by the addition of 36 dryers and two cylinders, making seven cylinders in all. This material has been ordered. Additional auxiliary equipment to be installed will be two jordans from the Shartle Brothers Machine Company and two high speed type beaters from the Dayton Beater and Hoist Company.

In connection with the operation of the machine, a new system will be used, where the present white water from the machine goes back to the beaters, instead of being dumped into the river. This not only has the advantages of saving stock, but it largely does away with polluting the river.

In increasing the capacity of the machine, it will also be necessary materially to enlarge the boiler house, sufficient to put the installation of another complete unit, boiler, stoker and economizer. This equipment has not been ordered as yet. The machine will be operated by a 200 horse power variable speed engine, direct connected.

"Last year we began looking forward to the present expansion campaign," said Mr. Hodge. "With that idea in view numerous installations of new equipment, notably stuff pumps, saw the small type replaced by large ones of sufficient capacity to supply the wants of the mill. We have also arranged with the Chicago, Kalamazoo & Saginaw Railroad to furnish us with additional switch track capacity, enough to double intake of raw stock.

"The Western Board and Paper mill was originally intended to have an output of 25 tons every 24 hours. We have run as high as 57 tons a day and with the improvements contemplated should easily exceed the latter figure by 50 per cent."

Kalamazoo Paper Co. Builds Clay House

The Kalamazoo Paper Company has just completed the erection of a large clay storage house, immediately adjoining the Riverview

Coated Division. It is one story high and is of brick, concrete and steel. It will have a capacity in excess of 2,000 tons of clay.

"We use about 2,000 tons of clay annually in mills Nos. 1 and 2 said A. E. Curtenius, secretary of the company, "and another thousand tons at mill No. 3. This clay comes from England and is very hard to handle when received during the winter months. Being damp, it naturally freezes in transit and then clogs to feed pipes. With an adequate storage plant, we will be able to get in our year's supply yearly before October. It will be thoroughly dried before being used in the mills.

Kalamazoo Boy Scouts Collect Paper

Boy Scouts of Kalamazoo are conducting a systematic paper stock collection campaign to secure funds for improvements to their summer camp, also for other needed equipment. This campaign is made possible through the co-operation of Isadore Graff, of D. Graff & Sons, who will furnish trucks for collection purposes, also furnish bags that can be delivered to householders and used as receptacles for holding old papers and magazines. Boy Scouts will distribute the bags, also carry the filled bags to the trucks, which will cover all streets systematically. The drive will be given a two weeks' trial and may be continued.

K. V. P. Co. Honors Ten Year Employees

Seven employees of the Kalamazoo Vegetable Parchment Company, who have served ten years with the concern, were guests of honor at a banquet, served Wednesday evening, at the community house. Special diplomas indicative of faithful service were given. Maude Thompson Choffat, Alfred Conrad, Harry Boldman, Karl Martin, Alfred Southon, John Carter and J. C. Knight.

The speakers were Jacob Kindleberger, C. S. Campbell, W. L. Brownell. A. B. Connable acted as toastmaster. There was music and dancing.

Timber Cruiser Nearly Drowned

A narrow escape from drowning by the chief cruiser of one of its field parties in Nova Scotia has just been reported to the New York Office of James D. Lacey & Co.

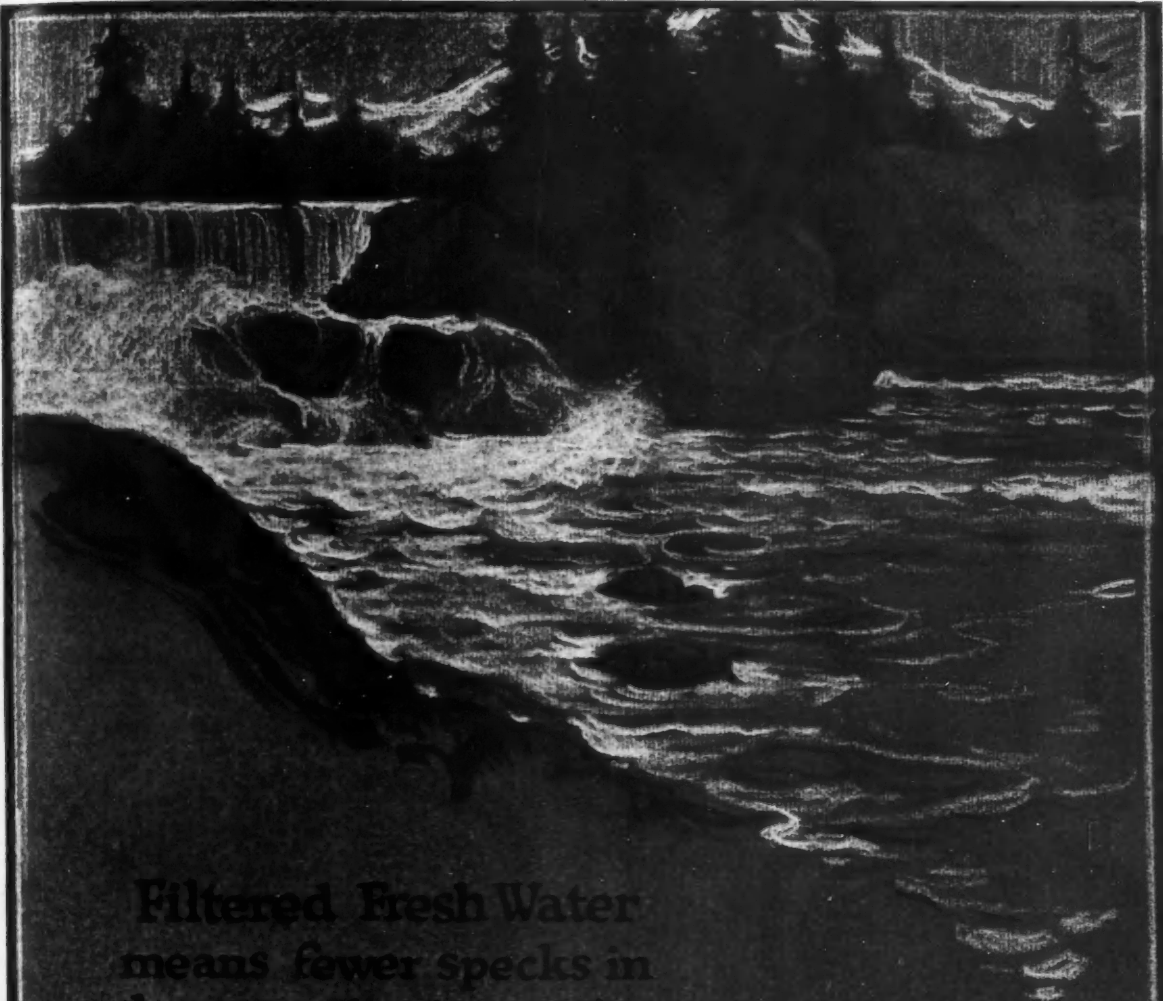
G. L. Knapton of Lawrence, Mass., was the man who nearly became a victim of the treacherous ice in the north woods during the spring breakup. While crossing one of the large lakes a bad spot in the ice sent Mr. Knapton into the water. He was able to kick himself loose from his snowshoes because he uses the Indian snowshoe, hitch designed for emergencies of this kind. His companion, George Snowden of Forest Hills, Long Island, threw himself flat upon the breaking ice, and by extending one of his snowshoes, Mr. Knapton was able to pull himself to the firm ice on one side.

They hurried to the shore and quickly built a fire which forestalled the consequences which are likely to follow an accident of this kind with men who are less hardy or not inured to the exposures to be met with on winter cruises in the North.

Mr. Knapton's experience as head of Lacey cruising parties has been very extensive. He was one of the men with the Northern Quebec party from the same office which was 16 days "mushing out" to a rail head in February, 1921, at practically the same time Lieutenant Hinton made his disastrous aerial trip to Hudson Bay.

Northwestern Superintendents to Meet May 18-19

At the meeting of the Northwestern Division of the American Pulp and Paper Mill Superintendents' Association to be held at Port Edwards, Wisconsin, on May 18 and 19, Walter S. Rooney of the Albany Felt Company is to give his illustrated talks on the "Manufacture of Felts and the Paper Industry in Japan." The dates of May 11 and 12 originally announced have been changed to May 18 and 19 according to B. T. McBain, chairman of the entertainment committee.



Filtered Fresh Water
 means fewer specks in
 the paper, longer service
 from wires, less trouble
 with machinery.

Let us tell you about the
Bird Water Filter

BIRD MACHINE COMPANY
 South Walpole, Mass.

U. S. Office
 111 Broadway, N. Y.
 Chicago, Ill.

Canadian Office
 Canadian Paper Filter Co. Ltd.
 100 St. James Street
 Montreal, Canada

BIRD WATER FILTER

PAPER DEMAND IN TORONTO SHOWS SOME IMPROVEMENT

General Trend of Trade More Satisfactory—Prices on All Varieties Firm and One Concern Raises Price on Tissue—Demand for Pulp Moderate With No Change in Quotations Which Have Been in Effect for Some Time—W. B. Carmichael, of Sydney, to Visit Canada Regarding Larger Supplies of Paper for Australia and New Zealand—Dryden Paper Co. Completes Extensive Improvements.

[FROM OUR REGULAR CORRESPONDENT.]

TORONTO, Ont., May 7, 1923.—Business in the paper line, which went flat with many jobbers during the last two weeks in April, has picked up some with the advent of May and the arrival of fine weather. The general trend of trade is improving. Some printing establishments report that orders are coming in more freely. Prices in all lines remain firm and one manufacturing concern has advanced quotations on tissues from ten to twelve per cent. Other producers have not followed suit, as they say that and shoe business and millinery and clothing trades, which have been dull for some time, has resulted in quite a falling off in tissue orders. Toilet plants are fairly well employed. Manufacturing stationers and envelope producers have been rather quiet during the past month, but business is picking up somewhat at present.

The outcome of the budget at Ottawa, which will be presented in Parliament during the coming week, has held up trade in many lines of activity until it is definitely known what tariff changes, if any, are made. It is not thought there will be any revisions affecting the paper industry.

News print is in strong demand. The recent raise in wages granted by several leading mills to employees will have a tendency to strengthen news print quotations. Specialty mills are doing a pretty fair business and the demand for pulp is moderate. No changes in the quotations, which have ruled for some time, are being made at present. A number of mills in the book and paper line are going more and more after export as the production in flat papers today is greater by a good deal than the home market can consume.

Getting After Antipodean Trade

W. B. Carmichael, of Sydney, Australia, head of the firm of Carmichael & Co., Limited, is now on his way to Canada and will confer with paper manufacturers in the leading cities with reference to supplying greater quantities of paper in various ranges for Australian and New Zealand markets. C. E. French, of Toronto, who has been appointed export representative of the Howard Smith Paper Mills, has left for Montreal preparatory to taking a trip overseas in the extension of the market for the high grade writing and bond papers manufactured by the firm. Arthur Hobson, who has had charge of the Winnipeg office of the Howard Smith Paper Mills, has arrived in Toronto and taken up the work of Mr. French. He is a former resident of Toronto.

Many Newspaper Mergers Going On

During the past two weeks, owing to the expense of producing dailies in the smaller cities, newspaper mergers have been effected in Stratford, Chatham and Renfrew, Ont. There are only seven cities in Ontario now having more than one daily paper, whereas, until recent years, there were two or more dailies published in every fair-sized center of population. The trend is toward consolidation, but it is expected that, as larger issues are put out, there will be no appreciable falling off in the consumption of news print. It is understood that work on the new plant of the Great Lakes Pulp and Paper Company will shortly proceed at Port Arthur or Fort William and that the principals of the company will

soon select a site. The new paper mill will cost in the neighborhood of three million dollars.

Dryden Paper Co. Improvements

The extensions to the plant of the Dryden Paper Company at Dryden, Ont., have been completed and the company will soon be producing seventy-five tons of sulphate pulp daily. The greater portion of this will be converted into light and heavy wrapping papers and sulphate pulp papers. A new beater and a new grinder room, as well as a new machine room, have been built and a 130-inch Yankee paper machine, which was built by the Beloit Iron Works of Beloit, Wis., installed. There is also being completed a 1,400 horsepower development at a convenient distance from the main plant. A new concrete dam, 300 feet long and with 150 feet of spillway is one of the features at Wainwright Falls on the Wabigoon river.

New Position for Mr. Atkinson

The St. Regis Paper Company of Canada will carry out several improvements on the Godbout river, which empties into the St. Lawrence near Matane, Que. W. F. V. Atkinson, of Toronto, has been appointed to take charge of the work and supervise the purchase of and preparations for shipping large quantities of pulp wood to the plants of the company across the border. The wood will be secured principally from settlers and will be shipped from newly constructed docks on the St. Lawrence. Mr. Atkinson was for several years in charge of the pulpwood operations at Sault Ste Marie for the Spanish River Pulp and Paper Mills and was later with the Dryden Paper Company, at Dryden, Ont.

Notes and Jottings of the Industry

James Thompson, a former member of the Ontario Legislature and a well-known lumberman and pulpwood dealer, addressed the Kiwanis Club, Toronto, recently on the resources of Canada in the pulpwood line. He stated that the administration of the government in the matter of reforestation was far behind the times and a decided improvement was needed. Unless radical measures were taken the present generation would live to realize the scarcity of timber. There was urgent need for the better protection from forest fires and in the present system of timber perpetuation.

John Hewitt, president of Paper Sales, Limited, Toronto, has returned from an extended business trip to British Columbia and reports that the outlook for the paper trade in the West is growing much brighter.

W. H. Sherriff, of the Hodge-Sherriff Paper Company, Toronto, selling agents for the Wayagamack Pulp and Paper Company, Three Rivers, Que., left this week on his semi-annual business trip to Winnipeg, Calgary, Edmonton, Vancouver and other cities in Western Canada.

George Davidson, of Toronto, sales manager of the Howard Smith Paper Mills, has returned from spending a few days at Asheville, N. C.

The Montrose plant of the Provincial Paper Mills, Toronto, has been connected up with the waterworks system of the town of Thorold and is now assured of pure water in the future. The supply was formerly obtained from the Welland canal, which, of late, has not been found suitable for the making of the finer grades of paper.

The Interlake Tissue Paper Mills, of Merriton, Ont., have recently placed on the market a new product known as the Interlake Household Towel, which comes in special sizes for domestic use.

Perfect Safety Paper Co. to Build

[FROM OUR REGULAR CORRESPONDENT.]

HOLYOKE, Mass., May 9.—The Perfect Safety Paper Company is to build an addition to its plant on Winter street, 54 by 76 feet in size, one story with sawtooth roof. The contract has been let to the Casper Ranger Construction Company of this city. The plans are from the office of Fletcher-Thompson, Inc., Bridgeport, Conn.

Why You Should Buy Niagara Beaters



Reason No. 6

Niagaras Beat Thoroughly and make Better Paper

Beating thoroughly and uniformly and so eliminating all dead spots Niagara beaters produce better stock. Moreover, in two to three minutes the color is uniform throughout the pulp mass, a material help in matching new shades. Not only is the quality of the stock improved but it is much easier to produce a standardized sheet. The importance of these two factors is self-evident.

Learn more about Niagara Beaters. Write a letter today asking for further information.

Valley Iron Works Company

Plant: Appleton, Wis.

New York Office: 350 Madison Ave.

Seven Additional Reasons

- 1.** Niagaras save power.
- 2.** Niagaras shorten beating time.
- 3.** One Niagara does the work of two and sometimes three Holland beaters.
- 4.** Niagaras save tremendously in floor space.
- 5.** Niagaras lower labor costs.
- 6.** The initial investment is lower.
- 7.** Niagaras save on motors and belting.

DEMAND IN PHILADELPHIA CONTINUES SATISFACTORY

Business for April, However, Not Quite up to Expectations Due to the Fact, It Is Said, That Printers Are Curtailing Their Orders—Mills Offer Lower Prices on Lower Grades of Paper Stock But Dealers Hold Out for Quoted Rates—Norbert A. Considine, of the Paper House of Pennsylvania, Sails for Europe—Victor A. Arndt Joins Sales Organization of Riegel & Co.

[FROM OUR REGULAR CORRESPONDENT.]

PHILADELPHIA, May 8, 1923.—The story of April in paper trade circles here, is now being told in terms of figures of the accounting department and while it reveals nothing to cause concern or even complaint, even though the splendid returns of March were not duplicated and to that extent fell below expectations, it is on the whole satisfactory. The financial returns were only disappointing to the extent that there was not realized the expectations formed during March. Trade is of the opinion that whatever quietness existed was due rather to financial conditions than to economic causes. An element of more or less importance in the situation lies in the circumstance that advancing paper prices necessarily have caused the printers to increase their quotations to their customers and that consumers seems more and more to take the position that the present is not the time for advancing prices and that rather than submit to them, they will curtail their orders or will hold off as long as possible. As a consequence of the conditions indicated and though no particular concern is made over the volume of trading done by the printers and other converters, complaint is general that collections are exceedingly slow. The opening week of May saw a slight improvement generally over the closing week of April, but none of very marked character. On all the printing paper, save perhaps import news, prices held steadily, and what trifling changes there were with the arrival of the new month were all of an upward tendency.

In the coarse paper end of the business krafts were in active demand, the No. 1 grade firmly maintaining the slightly increased price which became effective in April. No. 2's were more plentiful in supply and their prices also were steady save for special lots mostly of smaller sizes offered by some mills for as low as six cents. Screenings are holding firm and are by no means in over abundant supply; tissues are selling a little more actively, toiles are in fair demand, butcher's fibers are steady, but quotations on bogus eased an average of five per cent presumably following the decline in the cost of raw materials, principally paper stock.

Mills Reduce Offers for Stock

In the stock market it would seem judging from the prices offered by the mills for mixed commons and the lower grade of stock that values had tumbled most decidedly. A number of the mills with a concord which the paper stock dealers say impresses them as being significant offered only \$17 a ton for common stock. If quotations represented the prices as fixed by the buyers, a decline would have to be made, but the dealers maintain that the published rates in these columns still hold because they represent their holding prices and they are not selling at less than those quoted. During the week there came from out of town mills, some as far distant as Michigan, inquiries for large supplies of mixed and common stock, the writers making the observation that the West could give an outlet for stock if the Eastern mill declined to buy. The dealers therefore either are shipping stuff to such far away points as mill offerings combined with freight rates makes possible or are keeping these grades on storage convinced that it will not be long before the boxboard mills, all of which are reported to be operating on full time, are again in the market.

Spring house cleaning either was not thorough or prices offered were not regarded as adequate to bring out large supplies of mixed and common papers and therefore the stock dealers say they very well can afford to hold them. Meanwhile, demand for the better grades of paper stock runs from fair to good and while prices are not strong, they are at least steady. From the paper stock dealers point of view the chief requirement just now is to wait patiently.

Business and Romance Mingle

Real business and real romance were interestingly intermingled when the United American liner Reliance sailed out of the port of New York during the week with President Norbert A. Considine of the Paper House of Pennsylvania and Mrs. Considine and Mr. and Mrs. Edgerton Warburton, a salesman connected with the Paper House organization, on the passenger list. President Considine, as announced in these columns, some weeks ago decided to make the trip to Europe primarily to visit news print mills in Finland because of the firm's very rapidly growing import business and shortly before sailing decided to take along with him Mr. Warburton, a young man on his sales staff and son of director of Public Welfare, Barclay Warburton and grandson of the late John Wanamaker, because the young man had an extensive knowledge of foreign tongues. The young man, however, had very important interests here with the result that on the eve of the trip he walked into the Warburton home, 2032 Walnut street and announced that he just had been married and that his business trip abroad would also be a honeymoon. Mrs. Warburton was Miss Elizabeth Peltz of 2125 Locust street, daughter of a family well known in social circles and a student at a girls' school in Peekskill, N. Y. She is eighteen years of age. And thus it comes about that Mr. and Mrs. Considine and Mr. and Mrs. Warburton are fellow travelers. President Considine will visit Finland, Norway, Sweden, Germany, England and if time allows will take a trip down into Italy, although he contemplates return to this country in time to celebrate the nation's birthday at home.

Miss Catherine A. Woods, lately office manager of the Philadelphia warehouse of the Whitaker Paper Company which was taken over by the Garrett-Buchanan Co. and previously for several years in the employ of the D. L. Ward Co., having served altogether more than a decade in the paper business and becoming thoroughly acquainted with it, during the week has engaged to take charge of the office end of the import business of the Paper House of Pennsylvania.

Arndt Joins Riegel & Co.

Victor A. Arndt who was on the Charles Beck Company organization for eight years prior to joining that of the Whitaker Paper Company, Philadelphia branch and who remained with the old business under the new ownership of the Garrett-Buchanan Company until the close of the week, is now on the sales organization of Riegel & Co. James McKeag, Jr., recently with the James Bradley Company, stationers and previously with the Whiting Paper Company and the Raymond-McNutt Company is now also with Riegel & Co. President Arthur B. Sherrill of Riegel & Co. as a member of the Advisory Board of the Hammermill sales organization left early in the week for the notable convention at Erie and was followed later on by Clarence Horgan, F. C. Van Gilder and E. J. Mallory. Representatives from the D. L. Ward Company and the Thomas W. Price Company, also Hammermill distributors, subsequently joined the party.

Dill & Collins Entertain

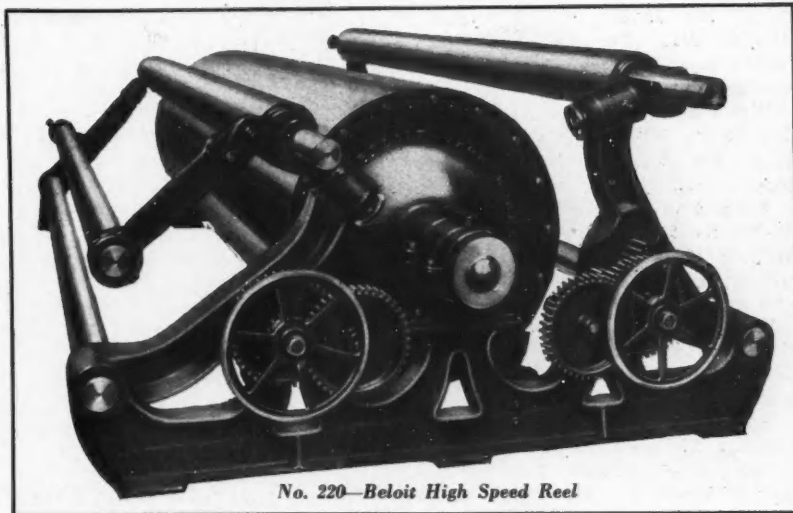
The story of paper manufacturing from timbering in to distribution throughout the country under the Dill & Collins Company system, is being told to printerdom of Philadelphia and vicinity in a series of lectures just instituted by the firm and taking place at its headquarters, 140 North Sixth street. Lantern slides are used to bring home the story of paper making and points of value to

(Continued on page 36)

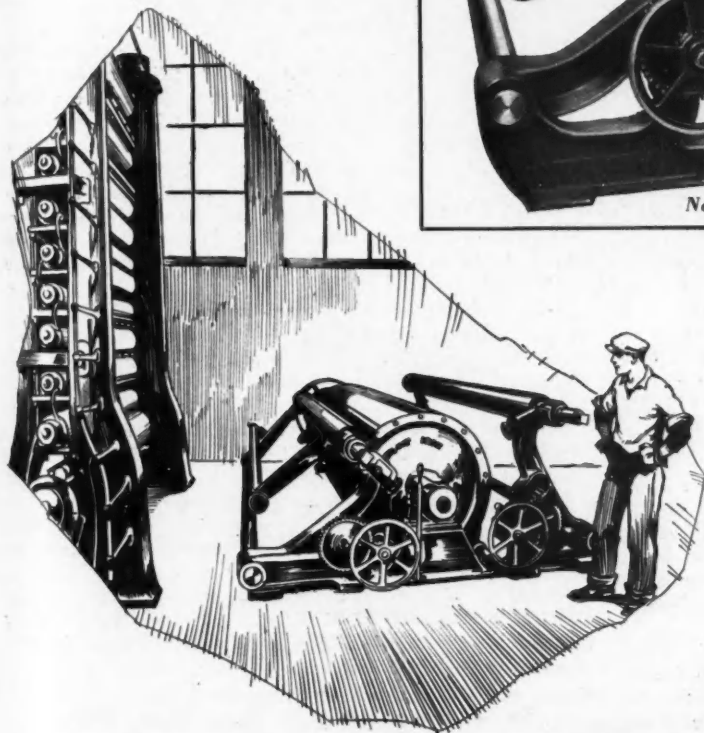


Beloit Uniform Speed Reel

Built for High Speed



No. 220—Beloit High Speed Reel



HIGHLY efficient reel with important special safety-first features. The arrangement of the spreader bar permits the placing of the paper on the reel without changing hands on the sheet, a necessity on high speed. No danger of a man getting caught in it. Diameter of main drum, 42 inches—cast iron—regular dryer construction. Generally made same face as calenders. Main drum is carried in ring oil bearings eliminating friction and requiring minimum amount of attention. Reel spools made of pipe of a suitable diameter for their length and so arranged that they fit directly into the unwinding stands when filled with paper. Equipped with adjustment screws on reel spools to assist in the draw of the paper. A stand-by with leading mills the world over.

Send Your Specifications to Beloit for Satisfaction.

Beloit Iron Works



Beloit, Wis., U. S. A.

Trade Marks Department

CONDUCTED BY NATIONAL TRADE-MARK CO., WASHINGTON, D. C.

The following are trade-mark applications pertinent to the paper and pulp field pending in the United States Patent Office which have been passed for publication and are in line for early registration unless opposition is filed promptly. For further information address National Trade-Mark Company, Barrister building, Washington, D. C.

As an additional service feature to its readers, the PAPER TRADE JOURNAL gladly offers to them an advance search free of charge, on any mark they may contemplate adopting or registering.

WHITE & WYCKOFF MANUFACTURING COMPANY (and monogram W-W) No. 173,116. White & Wyckoff Manufacturing Company, Holyoke, Mass. For papeteries, writing and typewriting tablets; writing paper in reams, pounds, and other packages; and mailing envelopes.

WHITE & WYCKOFF MANUFACTURING COMPANY (and monogram W-W) No. 173,122. White & Wyckoff Manufacturing Company, Holyoke, Mass. For papeteries, writing and typewriting tablets; writing paper in reams, pounds, and other packages; and mailing envelopes.

WHITE & WYCKOFF MANUFACTURING COMPANY, Holyoke, Mass. No. 173,121. White & Wyckoff Manufacturing Company, Holyoke, Mass. For papeteries, writing and typewriting tablets; writing paper in reams, pounds, and other packages; and mailing envelopes.

WHITE & WYCKOFF MANUFACTURING COMPANY (and monogram W-W) No. 173,122. White & Wyckoff Manufacturing Company, Holyoke, Mass. For papeteries, writing and typewriting tablets; writing paper in reams, pounds, and other packages; and mailing envelopes.

WHITWYCK OAK—No. 175, 827. White & Wyckoff Manufacturing Company, Holyoke, Mass. For papeteries, writing and typewriting tablets; writing paper in reams, pounds, and other packages; and mailing envelopes.

SUPER PLATE—No. 174,703. Standard Paper Manufacturing Company, Richmond, Va. For blotting paper.

DEFENDER—No. 174,704. Standard Paper Manufacturing Company, Richmond, Va. For blotting paper.

PHILADELPHIA DEMAND SATISFACTORY

(Continued from page 34)

its consumer. Harold B. Collins, secretary of the company was the speaker last week. Presence is by invitation, the lectures taking place on alternate Tuesday evenings, the guests being served dinner in the Dill & Collins cafeteria and subsequently being entertained with moving pictures.

Trade News and Personals

Despite the fact that the Legislature has passed an act known as the Derrick Bill prohibiting municipal adoption of a daylight saving schedule, council of Philadelphia is on record with a resolution of requests to merchants to observe the Daylight Saving program and the Philadelphia paper distributors unanimously are opening their doors an hour earlier and likewise closing them an hour earlier.

The wedding of Miss Dorothy Engle, daughter of H. Wilson Engle, secretary of the McDowell Paper Mills, to William Schultz, of the McClintock & Marshall Steel Corporation of Pottstown, Pa., was solemnized last Saturday at the Baptist Temple, Broad and Berks streets, the officiating clergyman being Dr. Russell H. Conwell. Following a honeymoon through the South, the young couple will be at home in Pottstown after May 15.

At the annual exhibition of the Gift and Art Show which is being held this week at the Hotel Adelphia, the Japan Paper Company has a display of its fine stationery papers including parchments and decorative papers used in the making of lampshades, paper tapes for tying and decorative papers for gift wrapping. It

was in charge of George A. Nelson, manager of sales of the New York office, assisted by B. G. Harrsen, W. C. Miller and Miss A. E. Doak, manager of the Philadelphia headquarters in the Witherspoon Building. The Japan Company is now distributing a line of Swedish, French, Italian and Japanese papers adapted for fancy stationery requirements and printers' use.

J. S. Cochran, vice-president of the Durham Paper & Pulp Company, Durham, Pa., made the rounds of the Philadelphia trade during the week reporting on behalf of his concern heavy production and active sales of Kraft paper.

Extensive renovations are in course of progress in the buildings, 321 Cherry street, formerly occupied by the S. Walter Company, Ltd., prior to its removal to its own building, Fifth and Cherry streets. The Walter Company will use the basement for additional storage.

Three hundred men employed by the York Haven Paper Company, at York Haven, Pa., received the benefit of an increase of wages averaging from 10 to 15 cents per hour and retroactive to April 16.

Employees of the John Lang Paper Company, 23rd and Vine streets, prevented a serious fire during the week when they discovered flames coming from the elevator shaft just as they were preparing to leave the building and after most of the force had gone home. Forming into a relay they brought up hand apparatus to the floor in which the blaze was confined and by playing chemicals on the blaze in the elevator shaft, put out the fire with but slight loss, before the arrival of the firemen.

Bids for Government Paper

[FROM OUR REGULAR CORRESPONDENT.]

WASHINGTON, D. C., May 9, 1923.—The purchasing officer of the Government Printing Office has received the following bids:

50,000 lbs. 26 x 38—No. 50, chip board: Wilkinson Bros. & Co., at \$58.50 per ton; the La Boiteaux Company, \$56.80; R. P. Andrews Paper Company, \$55.70; Mathers-Lamm Paper Company, \$55.54; the Whitaker Paper Company, \$55.31; F. T. Parsons Paper Company, \$56; Dobler & Mudge, \$55.84; Republic Bag and Paper Company, \$61.50; Denison Pratt Paper Company, \$60; United Paper-board Company, \$58.80; Reese & Reese, \$54.53; the Broderick Paper Company, \$55.54; Barton, Duer & Koch Paper Company, \$58.75.

The purchasing officer of the Government Printing Office has received the following paper bids:

800 lbs. 20 x 30—8 white tissue paper: The Broderick Paper Company, at \$2.90 per ream; Dobler & Mudge, \$2.75; Reese & Reese, \$1.11; R. P. Andrews Paper Company, \$2.63; Whitaker Paper Company, \$3.23; Manhattan Paper Company, Inc., \$.625; Wilkinson Bros. & Co., \$1.16; Whiting-Patterson Company, \$1.54; Mathers-Lamm Paper Company, \$.97.

5,000 lbs. 24 x 36—40 prepared offset paper for Webb press: Whitaker Paper Company, \$1.075 per lb.; Samuel S. Alcorn, \$.18; R. P. Andrews Paper Company, \$.124; Domestic Mills Paper Company, \$.106; Reese & Reese, \$.0896.

500,000 lbs. 24 x 36—32 newsprint paper, 48-in. rolls: International Paper Company, \$.0433 per lb.; Interstate Pulp and Paper Company, \$.0434; Dobler & Mudge, \$.0475; Trustees for Kennebec Paper Company, \$.045.

No Advance Likely in News Print Prices

MONTREAL, Que., May 7, 1923.—The *Financial Times*, of Montreal, says: "While practically all the pulp and paper mills in Canada, as well as the United States, will bring into effect the new union scale of an increase of five cents an hour, the opinion prevails that this in itself will not bring about an increased price within the near future. The higher labor costs by themselves will mean only a comparatively small part of \$5 a ton, and so far it seems to be the disposition of the mills to absorb this."

CADY'S ELECTRIC PAPER TESTER



1725 R. P. M. at the motor, stepped
down to 4 R. P. M. at the diaphragm.

Life Size
14 in. high
22 in. long

Patent Pending

Motor Driven (Hydraulic) Uniform pressure on diaphragm at all times, at all places. Electric Current is the most uniform of any power obtainable.

Place the paper or board under the clamp, reverse the handle, clamp comes down, motor starts, when rupture takes place return handle to starting point, pressure is released from diaphragm, clamp raises and motor stops. There is less variation in paper and board than the hand driven Tester discloses, because the pressure is always the same; no fast and slow pressure as when operated by hand. Pressure ceases and motors stop automatically. Human element almost entirely eliminated.

E. J. Cady & Company

326 W. Madison Street

Chicago, Ills.

New York Trade Dattings

Grellet Collins, of the Dill & Collins Paper Company, visited the New York City trade during the week.

The Hoboken Paper Mill Company, Inc., has removed its offices from 200 Fifth avenue to 151 Fifth avenue, room 1,301.

George W. Sisson, Jr., president of the Racquette River Paper Company, Potsdam, N. Y., was among the trade visitors in the city last week.

The Invincible Paper and Pulp Corporation is now settled in its new quarters, room 1,201, Canadian-Pacific Building, 342 Madison avenue. The company specializes in wood pulp for paper mills, and it also sells all kinds of printing papers and tissue papers to paper jobbers.

The International Paper Company at its annual meeting, May 2, reelected the following officers: Philip T. Dodge, president; Ogden Mills, W. E. Haskell, Allen Curtis, and Chester W. Lyman, vice-presidents; Owen Shepherd, treasurer; F. G. Simons, secretary; B. O. Booth, auditor.

Warren B. Bullock, of the American Paper and Pulp Association, was chairman of the committee which had charge last week of the planting of 5,000 trees on the Yonkers watershed. The Boy Scouts did the actual work. This is only part of the general plan for reforesting New York State and with the trees planted last week brings the total number that have been put in the ground thus far up to 55,000.

Another of the series of conferences being held by officers of the American Paper and Pulp Association in various portions of the country was an informal luncheon with manufacturers in the Buffalo district on Friday, May 4. Dr. Baker also visited Erie, where he spoke before the sales conference of the Hammermill Paper Company on Thursday, May 3, and before returning to New York paid a visit to the manufacturers in Lockport, stopping over Friday evening to speak before the annual dinner given by the Lockport Rotary Club to about 100 boys of that city.

Cyrus Field Logan, engineer of the Grass Fibre Pulp and Paper Company, Leesburg, Fla., was a New York visitor last week. Mr. Logan has been supervising a number of runs of different grades of paper made from grass fiber pulp produced from sea grass at his mill in Florida. Through the co-operation of the owners, U. S. Paper Manufacturing Corporation, the paper has been made at the Cecil paper mill, Rising Sun, Md., and entirely satisfactory results were obtained. The grades made include both wrapping and printing papers.

The Philadelphia Paper Manufacturing Company, whose paper box board mills are at Manayunk, Philadelphia, in order more directly and satisfactorily to serve the consumers of box boards and fiber shipping cases has opened a New York office at 110 East Forty-second street, telephone Vanderbilt 0650-0651. Charles M. Mead, who for a number of years acted as sales manager at Philadelphia, will manage this office and his knowledge and experience in this line is such as to warrant confidence in his ability to serve consumers to the best advantage. A. C. Buell, formerly with Bird & Son, East Walpole, Mass., will handle the firm's shipping container business in this district.

Floyd L. Carlisle, active head of F. L. Carlisle & Co., Inc., of 49 Wall street, and president of the St. Regis Paper Company, at 30 East Forty-second street, has been examined for life insurance, the

total amount of which will rank among the largest ever taken out on an individual life. Though the details of the matter have not as yet been completed, the tentative sum set as adequate protection for all the interests concerned is \$3,000,000. The "Spectator," however, has it upon "the most reliable authority" that the sum of the insurance when actually in force may not exceed \$2,000,000. The demand for insurance on the life of Mr. Carlisle was originated by the St. Regis Paper Company, which will cover him for \$1,000,000.

Paper Sales Hold Up Well in Chicago

[FROM OUR REGULAR CORRESPONDENT.]

CHICAGO, May 7, 1923.—According to Chicago paper merchants the paper market remains unchanged, except for reductions in the prices paid for old paper stock, which took a drop on May 1.

Sales and deliveries made by manufacturers and jobbers this year show a marked improvement over last year. Although the year is advancing and this is the period of the year when sales usually decrease, the volume is holding up quite well.

While the demand is general and for all grades of paper, the trade reports the greatest activity on the various grades of printing papers. Coated papers, ledgers, writings and bonds are receiving the greatest attention. Slight advances, averaging less than 25 cents a hundred pounds, have been noted. This has had an apparent effect of stimulating the market.

Wrapping papers, toiles and tissues continue to enjoy a good market. In like manner fiber and corrugated board are holding up well, although a few box manufacturers have noticed a slight reduction in the number of new orders. There is plenty of work on hand, however, to keep these plants going for some little time to come.

M. E. Marcuse Elected to Chamber of Commerce

Milton E. Marcuse, president of the Bedford Paper and Pulp Company of Richmond, Va., has been nominated to the Board of Directors of the United States Chamber of Commerce. When the nomination is ratified on Thursday at a meeting of the organization in Washington he will be regularly elected. The ratification is a mere formality, however, and the nomination really amounts to election. He is the first member of the paper industry ever to receive this honor.

Felix Pagenstecher, of the Bryant Paper Company, Kalamazoo, Mich., was also nominated but withdrew his name in order that Mr. Marcuse might be surer of election. Max W. Babb, of the Alyss-Chalmers Company, was up for re-election in Mr. Pagenstecher's district. He has already served a term on the Board of Directors.

Tariff Commission Investigating Casein Rates

[FROM OUR REGULAR CORRESPONDENT.]

WASHINGTON, D. C., May 9, 1923.—Dexter North and L. A. Bailiff of the United States Tariff Commission left Washington the latter part of last week for Carolina, where they are looking into the casein situation in connection with the commission's investigation of casein rates. Upon returning to Washington, Mr. North will go to Europe, where he will join other experts of the commission in looking into the sodium nitrate situation.

Superintendents' Wisconsin Meeting

A very cordial invitation has been received from B. T. McBain, assistant general manager, Nekoosa-Edwards Paper Company, the chairman of the committee on arrangements, for all members of T. A. P. I., but especially those located in Minnesota, Wisconsin and Michigan, to attend the meeting of the superintendents to be held on May 18 and 19 at Wisconsin Rapids, Wis. The mills of Consolidated Water Power and Paper Company and Nekoosa-Edwards Paper Company will be inspected and an interesting and valuable program has been provided for the two-day session.

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KRAFT PULP

Uniform in Quality
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Sole Agents for United States for

CANADIAN KRAFT, Ltd.

Three Rivers, CANADA

Bids for Government Envelopes

[FROM OUR REGULAR CORRESPONDENT.]

WASHINGTON, D. C., May 9, 1923.—Bids have just been opened in the office of the Purchasing Agent of the Post Office Department for 214,388,000 official envelopes which, it is estimated, will be required by all departments and independent establishments of the Government during the coming fiscal year. It was announced by Postmaster General Harry S. New recently.

There were seven bidders, as follows:

R. P. Andrews Paper Company, Washington, D. C.; R. Carter Ballentyne, Washington, D. C.; F. T. Parsons Paper Company, Washington, D. C.; United States Envelope Company, Springfield, Mass.; the Union Envelope Company of Richmond, Va.; Charles W. Beers & Co., Baltimore, Md.; the Southworth Company, Wintineague, Mass.

On May 1, additional bids were opened for furnishing 140,000,000 official envelopes for the postal service at a total cost of approximately \$178,061.50. The bidders on this contract were the Samuel Cupples Envelope Company of New York City and the United States Envelope Company of Springfield, Mass.

Since 1895 the purchase of envelopes for the departments and independent establishments of the Government has been centralized under the Postmaster General by act of Congress. The purpose of Congress was to effect economies, and prevent the purchase and attempted use by other Government branches of envelopes which could not be admitted to the mails. The centralization plan was found to be especially valuable during the world war, when a paper shortage made it difficult to get a sufficient supply of envelopes from any source. The plan resulted in securing a working supply for each department.

Specifications for the purchase of envelopes have been carefully prepared and revised from year to year by a committee of experts from the various departments assisted by paper experts from the Bureau of Standards. Most of these men have had long years of experience in supplying their departments with envelopes, and each has a thorough knowledge of the needs of his department as to quality of paper and envelope sizes.

Confer on Government Waste Paper

[FROM OUR REGULAR CORRESPONDENT.]

WASHINGTON, D. C., May 9, 1923.—A conference was held here the latter part of last week between officials of the Federal Specifications Board and waste paper dealers of Washington and other places in connection with the collection and purchase of government waste paper.

At the present time, according to the information divulged at the conference, there are about 4,000,000 pounds of paper collected every six months from the government departments, exclusive of the Government Printing Office. There was some talk at the conference regarding the possibility of centralizing the collection of the paper waste from the various departments, but this did not seem to meet with general approval. A suggestion was made, however, that the contract, instead of being made by all of the different government departments be made through the general supply committee. The waste paper dealers impressed upon members of the board the fact that they did not care for a six months' contract, but what they want is a yearly contract.

Definite Forestry Policy Urged for New York

SARANAC LAKE, May 7, 1923.—"The cost of wood has now passed the cost of production by reforestation, and the time has now come when the State of New York must lay out a definite forestry policy, to make possible the utilization of the millions of acres which are now producing little or nothing," said Dr. Hugh P. Baker, executive secretary of the American Paper and Pulp Association, speaking tonight before the Central Adirondack Hotelmen's Association.

"We must face the facts," he added. "Forestry is now an economic problem, and not a sentimental one. These things must be done, if the State is to derive a fair return from its great natural resources:

"We must have a definite program of State and Federal co-operation with private land owners.

"There must be an adjustment of taxes to encourage, instead of prevent, the reforestation of idle lands.

"The State timber must be used for the common good, to produce the lumber needed by the State, under such proper measures of restriction by the State Conservation Commission as to protect the forests from devastation.

"Reforestation must be applied on the lands which have been so denuded as to prevent their restocking by natural means.

"It is useless to require the private owner to handle his lands otherwise than is found practicable by the State itself on its own lands. The policy of handling land to secure continuous forest growth must apply equally to private and public lands."

Paper Production Continues at High Rate

[FROM OUR REGULAR CORRESPONDENT.]

WASHINGTON, D. C., May 9, 1923.—The Federal Reserve Board, in its monthly statement of business and manufacturing conditions, has the following to say regarding paper:

"Production of all grades of paper continues at a high rate under the impetus of a good demand. Reports from the Philadelphia Federal Reserve District indicate that many mills making book and magazine papers, manila papers, building paper and boards, and cardboards were running at capacity. Prices of some grades have recently been advanced, but no general increases have occurred. Paper boards, however, which have risen considerably in recent months, declined in price at the beginning of April. Chemical pulp prices have advanced recently, whereas mechanical pulp has declined. News print production and shipments during March were at a high rate and exceeded the figures for any other March on record. Stocks declined slightly and were rather low for this season. Output and shipments of all other grades of paper and of wood pulp were well maintained during February, the latest month for which statistics are available. Stocks of wood pulp at the end of February were at the lowest point recorded within the last four years."

Du Ponts Announce New Color

E. I. du Pont de Nemours & Co. announce the development of an important acid yellow dye, especially noted for its excellent resistance to light, being one of the fastest acid yellows in this respect. The new color is known as Pontacyl Light Yellow 3G, and on account of its good solubility and bright clear shade, is an important color for lakes, being well adapted for use in the manufacture of printing and lithographic inks. On paper, it is suitable for dipping, coating and calender coloring.

This dye is one of those which has been imported in important quantities from Europe, and its development here makes it available for American manufacturers as a native color.

To Handle Uehling Instrument in Canada

The Combustion Engineering Corporation, Ltd., and the Uehling Instrument Company has recently entered into an agreement whereby Uehling interests in the Dominion of Canada and Newfoundland will be handled exclusively by the Combustion Engineering Corporation, Ltd., with principal offices located in Toronto, Montreal, Winnipeg and Vancouver. The Uehling lines includes such fuel economy equipment as CO₂ recorders, SO₂ recorders, draft recorders, combined barometer and vacuum recorders, absolute pressure indicators, etc.

Established 1886

Service

Words, someone said, are used to conceal meaning. Perhaps that is why so many people use the word "Service." No word has suffered greater abuse. Service can mean much, or little, or nothing.

With this organization, service for thirty-seven years has meant everything, without reservations, mild or otherwise. Ours is always service plus, never minus. We protect our own interests by being so jealous of the interests of our clients.

M. GOTTESMAN & COMPANY

—INCORPORATED—

18 East 41st Street
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U. S. A.

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Stockholm, Sweden

Editorial

Vol. LXXVI New York, May 10, 1923 No. 19

HENRY J. BERGER, Editor

MUST RETAIN DUTY ON BOOK PAPER

There appears to have been some misunderstanding, the PAPER TRADE JOURNAL is informed, in regard to a statement alleged to have been issued by the Canadian Pulp and Paper Association as the opening gun in a campaign for securing the free entry of book paper into the United States. Edward Beck, secretary of the Canadian Pulp and Paper Association, states that his association did not enter on any campaign. The American publishers, however, did send a man to Montreal to make enquiries as to the possibilities of getting part of this supply from Canada because their demands are such, it is said, that the American mills are incapable of filling them. This representative discussed the matter with several members of the Canadian Pulp and Paper Association and also with the secretary. He asked the latter if he would put the gist of his statements into writing as he would like to have a record of the conversation to take back with him. Mr. Beck wrote a letter to him in which he stated that Canadian book mills had an excess production of twenty to thirty thousand tons a year, that is, including the new mill at Port Arthur, to come into operation shortly, and that if it were possible to get the American market for book paper it would result in an expansion in book print manufacture equal to that which had been witnessed in the manufacture of news print. Mr. Beck also gave him some arguments on the subject. This letter, which was not an official statement but a personal memo, appears to have been put out in a bulletin which circulates among the American publishers of magazines as a statement coming from the secretary of the Canadian Pulp and Paper Association.

"As far as the facts in the letter are concerned," said Mr. Beck, "they are absolutely correct. If there were a free market for book paper in the United States we should at once see a development in Canada in the production of book paper that would correspond with what is taking place in the production of news print. It goes without saying that American book paper manufacturers would come here and start mills as they have done for news print and, of course, we should be anxious to encourage them, but to say that we are ready to take care of the surplus requirements of the American magazine publishers is not correct because we have a very small surplus production here now. The whole intention of my letter was to help the American magazine publishers, if they felt so disposed, to get the American market open."

George W. Sisson, Jr., president of the Racquette River Paper Company, of Potsdam, N. Y., has written the editor of the PAPER TRADE JOURNAL a letter which is interesting in this connection. Mr. Sisson, more especially during his several years as president of the American Paper and Pulp Association, paper men learned to appreciate, usually, when he speaks or writes says something worth while and his letter is printed here because of that fact.

"I am pleased to note your vigorous editorial in your issue of April 26 touching on the concerted effort of the Canadian paper

mills to invade the American market with book paper and other high grades. I had wondered at the apparent apathy of the industry in this country in the face of such propaganda as is now going on.

"We have the spectacle of Canadian manufacturers demanding free entrance into our market, and using all sorts of specious arguments directed at the American consumer to create a situation *here* favorable to their plans, while at the same time Canada and the United States are being deluged with propaganda for the prohibition of the export of any unmanufactured pulpwood from Canada.

"It is a situation to arouse the indignation of every red blooded American paper manufacturer, and it is high time that the industry in the United States made itself heard in no uncertain tones on these matters. I cannot forbear suggesting to those of our book paper manufacturers who fell in with the Canadian propaganda for free chemical pulp, that this new movement is but the natural development of such a divided attitude as was exhibited during the period of tariff adjustment on pulp and paper products.

"It would seem as though a proper sense of decency and fair play in international business relations would prevent such an anomalous situation as is presented in these two propositions emanating from our neighbors at the North.

"We should make our attitude on these matters very clear to our representatives at Washington and to the administration, and plainly indicate to our friends at the North that we shall not sit quietly by and permit any such program as has been suggested go through.

"I may say that the mills in which I am interested do not make book or fine papers and are fairly well supplied with timber holdings in this country."

Members of the American paper industry have only the kindest feeling for their neighbors across the line and they are pleased to see the paper industry there prosper and expand. It cannot be emphasized too greatly, however, that they are decidedly against any change in the tariff laws which would be likely to injure any section of the American paper industry and the law makers at Washington should be made acquainted with this fact so that another mistake like the reciprocity fiasco during Mr. Taft's administration, for instance, may not be made.

THE WORK OF THE SALESMEN'S ASSOCIATION

The Salesmen's Association of the Paper Industry, although among the newer associations, has passed its organization stage, and has become a fixed institution in the paper business. It has received gratifying support from the very start from the executives of the more representative paper concerns, and substantial additions are being made constantly to the membership.

It is believed, however, by those who are most intimately acquainted with the work of the organization, that expansion in the membership would be more rapid if salesmen themselves, better and more widely appreciated just what the association is doing. During the coming year, plans have already been made to strengthen the luncheon clubs in paper centers where they have already been formed, and to establish them in other cities not already organized. These clubs have already been extremely suc-

cessful as educational and moral factors, and it is planned to make them increasingly so in the future.

At these weekly luncheons, the little weekly bulletins of the association which supplement the monthly bulletins, and which are designed to keep the members posted on changing conditions, not only in their own grades of paper, but in all grades in the industry, as well as individual reports from the various sections, are exhaustively discussed in round table.

Nothing, however, is ever said regarding prices, or the situation of individual mills. At these discussions, in fact, all matters and questions that might embarrass any member, are carefully avoided. The discussion, however, does have to do with production, orders, stocks, and general conditions, in a manner which cannot fail to develop all of those who regularly attend, into higher grade paper salesmen.

The factor of fellowship, and the intimate acquaintance that is promoted by attendance at these luncheons, also cannot be overestimated. The dark ages are passed, and thinking men some time ago arrived at the conclusion that more can be accomplished by honest co-operation, than the old time cut-throat methods of every fellow for himself.

The Salesmen's Association of the Paper Industry has a splendid group of officers, and it is going to do constructive work during the coming months. It is bound to grow, and it will benefit both the individual salesman and the industry at large.

Bag Manufacturers Need Association

BROOKLYN, N. Y., May 7, 1923.

Editor PAPER TRADE JOURNAL:

What seems to be wrong with the paper bag industry? A seemingly hard and yet simple question to answer. Summed up in a few words, lack of proper leadership and complete lack of co-operation between the manufacturers and jobber.

From my own personal observations, extending over a period of twelve years, I find this to be the case. The conditions that exist today in the industry are shameful and deplorable.

How then can these conditions be remedied? Firstly—There ought to be an association formed by the manufacturers, to be called, "The National Association of Paper Bag Manufacturers in the United States." The aim of this association should be, to promote good will between the manufacturer and jobber, to foster the American spirit of fair play, and to eliminate existing abuses and ruinous competition.

Secondly—I am of the opinion that in all cases the manufacturers should deal direct with the jobbers, and not through selling agents, also that all sales made should be on the F. O. B. mill basis, no freight allowed.

What the paper bag industry needs is a man of vision, foresight and courage to lead it. A Gary, or a Schwab. Can such a man be found? Let us see.

I. LEVIN,

HUDSON BAG COMPANY, INC.

Sandy Hill Iron & Brass Works Elects Officers

HUDSON FALLS, N. Y., May 7, 1923.—At the annual meeting of the Sandy Hill Iron and Brass Works, the following directors were elected: A. J. Kennedy, R. C. Tefft, Jr., C. W. Kellogg, H. L. Broughton and J. M. Ferris.

After the annual meeting the directors met and elected the following officers: A. J. Kennedy, president; R. C. Tefft, Jr., vice-president; J. M. Ferris, secretary-treasurer.

Water Power Development in Newfoundland

A number of engineers of the Sir W. G. Armstrong, Whitworth Company have recently been on a visit to Montreal on their way to Newfoundland in connection with the scheme, known as the "Humberarm proposition" for the developing of a large amount of hydro-electric power on the west side of Newfoundland and using it in connection with pulp and paper mills, says the *Engineering Journal of Canada*. These engineers have visited a number of developments in eastern Canada and expect shortly to proceed to the site of the new work.

Briefly, the proposal is to develop about 100,000 h.p. at a point on Deer Lake, and to erect pulp and paper mills with a daily output of 400 tons of news print. The amount of power available in the neighbourhood is 230,000 to 240,000 h.p., all of which would be developed in due course as a market can be found for it. The works at present planned for execution during the next two years include a concrete dam, 75 ft. high and 1,200 ft. long, across Junction Brook to retain the waters of Grand Lake, which, with its area of nearly 200 square miles, will permit the spring floods to be stored for use later in the year when the rivers are usually lower. From a point above the dam a canal will lead the water to Glide Brook Lake, which will be formed by utilizing the valley through which the brook runs and by constructing an earth bank which will maintain the water at a level 5 ft. below that of Grand Lake. At the western end Glide Brook Lake will be closed by another deep bank, and the water will be conveyed in an open canal to the forebay, whence it will flow under a head of 250 ft. in pipes down to the Francis turbines in the power house. The whole output of the station, which will generate at 6,000 volts, will be transmitted by high tension lines to the pulp and paper mills some distance away.

The necessary works, including also spillways, log chutes, sluices, ice racks, ice chutes, and devices for dealing with any hydraulic emergency that may arise, have already been put in hand by Sir W. G. Armstrong, Whitworth & Co., who will execute the whole of the contract, and preliminary arrangements have been made at Elswick for the manufacture of the turbines. The papermaking machinery will be supplied by Messrs. Charles Walmsley & Co., of Bury, Lanes (members of the Armstrong group). The steam for cooking the pulp and drying the paper will be generated in electric boilers absorbing 60,000 h.p., and about 30,000 h.p. will be utilized on the mechanical operation of the mills.

M. L. Cramer Leaves American Writing Paper Co.

HOLYOKE, Mass., May 9, 1923.—Martin L. Cramer, for the past five or six years purchasing agent for the American Writing Paper Company, resigned his position Saturday to take effect at once. He was succeeded by James T. Robinson, formerly head of the American Tissue Mills of this city.

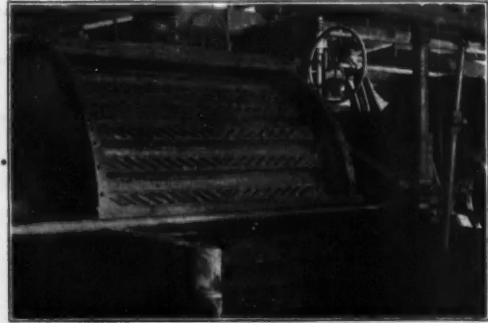
Mr. Cramer came to the American Company from the Michelin Tire Company of Milltown, N. J., in 1917. He has had charge of several difficult fuel situations and is considered as one of the best posted men on fuel situations in New England. On occasion of the first fuel shortage he achieved high credit by working almost night and day to keep the coal cars of the American Writing Company moving in the right direction. Sometimes he was at the mines, sometimes at the junction points, rarely at the office, but the coal cars of the American Writing Paper Company came through when many other concerns couldn't get their cars through at all. He was highly esteemed in the community, being a member of the Chamber of Commerce, Rotary Club, trustee of the Day Nursery and in other ways identified with its interests.

Mr. Robinson recently had suit brought against him as head of the American Tissue Mills to force him from that position. The suit was settled out of court, the concern paying him to break his contract with them. The reason for the friction that led to the suit being brought has never been made public.

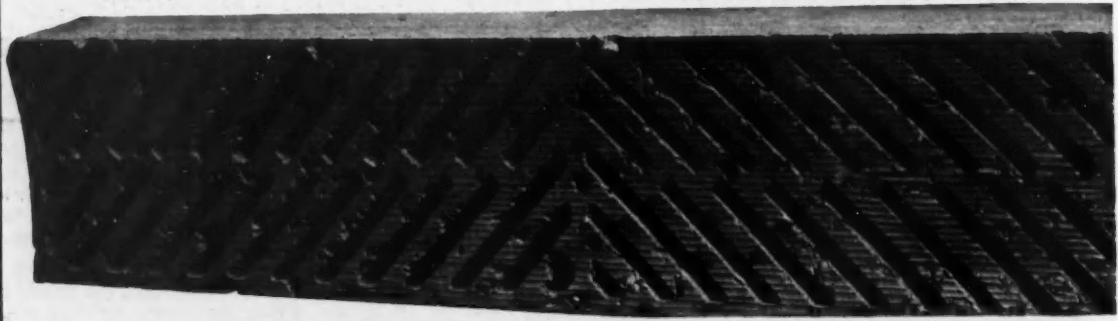
Conclusive Evidence on Beater Filling

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.

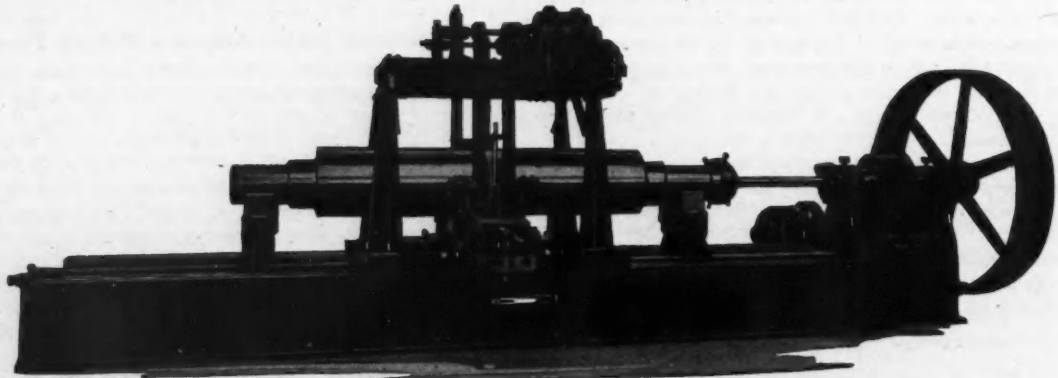
FIBRE MAKING PROCESSES, INC.
Chicago



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



LOBDELL **ROLL GRINDERS** are the only machines of the kind fitted with automatic crowning device which develops a perfect crown without the use of a guide or former and repeated trying for the correct setting.



LOBDELL Calenders are equipped with Patent Electric Motor, Hydraulic or Ratchet Lift all operated from the floor.

LOBDELL Micrometer Calipers are handy and accurate.

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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

REPORT ON SCHOPPER FOLDING MACHINES*

HELEN U. KIELY, AMERICAN WRITING PAPER CO.

In connection with the work of the Paper Testing Committee of the Technical Association of the Pulp & Paper Industry, a study of the Schopper Folding Machine was undertaken.

There has been very little published on the accuracy of the machine, tolerances allowable and value of results in valuating a paper. The committee, therefore, decided to investigate the Schopper Folding Machine and ascertain if there was a wide variation in the individual results and if it was impossible to secure duplication of averages on the same or different machines as they are ordinarily used, to ascertain what tolerances would have to be applied and how the folding number should be considered in relation to the value of a paper.

Procedure for Adjusting Machine Before Testing

It was necessary first to issue instructions for the calibration of the machine and to receive from each worker a statement as to the running of his machine.

The following are the standard measurements for the Schopper Folding Machine:

- (1) Thickness of the folding plate—0.020 in.
- (2) Width of the slot in this plate—.020 in.
- (3) Distance between the rollers and plate—.015 in.
- (4) Distance between the rollers parallel to the strip to be folded—.022 in.
- (5) Spring tension—1,000 grams.

*Presented at the sectional meeting on Paper Testing at the Annual Convention of TAPPI, April 9-13, 1923.

I. Compilation of Folding Data for All Machines

	Humidity—66-68%										Temp.—68-71*									
	M-X Set					CX Set					M-Y Set					C-Y Set				
	Combined machine check		Individual machine check			Tolerance. Total possible variation	Combined machine check		Individual machine check			Tolerance. Total possible variation	Combined machine check		Individual machine check			Tolerance. Total possible variation		
	Set No.	Average of ten strips	% Above all	Average of ten strips	% Above all		Average of ten strips	% Above all	Average of ten strips	% Above all	Average of ten strips		% Above all	Average of ten strips	% Above all	Average of ten strips	% Above all			
Bureau of Standards, No. 1.....	1	758	1.5	10.8	827	8.4	5.6	16.4	572	11.5	11.1	642	10.9	10.9	22.0					
2	845	13.0	.....	.....	2.1	.....	.....	748	15.8	.....	.....	16.3	.....	.....				
3	879	17.8	.....	.....	6.2	.....	.....	607	-6.1	.....	.....	5.5	.....	.....				
Bureau of Standards, No. 2.....	4	901	20.9	20.0	896	5	7.0	27.0	688	6.2	6.6	717	4.1	8.5	15.1					
5	985	32.0	.....	.....	10.0	.....	.....	809	12.5	.....	.....	12.8	.....	.....				
6	801	7.2	.....	.....	10.5	.....	.....	655	1.2	.....	.....	8.7	.....	.....				
American Writing Paper Co.....	9	597	-20.0	16.5	623	4.2	4.2	20.7	741	14.9	13.2	694	6.9	8.9	22.1					
10	631	-15.3	.....	.....	1.2	.....	.....	757	17.0	.....	.....	9.0	.....	.....				
11	596	-20.1	.....	.....	4.2	.....	.....	571	11.6	.....	.....	17.6	.....	.....				
12	669	-10.4	.....	.....	7.2	.....	.....	706	9.1	.....	.....	1.9	.....	.....				
Bureau of Chemistry	17	978	31.0	35.8	1014	3.5	3.5	39.3	741	14.7	10.0	678	9.3	9.4	19.4					
18	1050	40.7	.....	.....	3.5	.....	.....	612	-5.3	.....	.....	9.6	.....	.....				
Strathmore Paper Co.	21	692	-7.1	16.8	620	11.6	11.6	28.4	648	2	3.6	671	3.5	3.3	6.9					
22	549	-26.5	.....	.....	11.6	.....	.....	693	7.0	.....	.....	3.1	.....	.....				
U. S. Testing Co., Inc.	23	535	-28.2	33.0	504	6.1	6.1	39.1	412	-36.2	36.4	411	.1	.1	36.5					
24	472	-36.7	.....	.....	6.1	.....	.....	410	-36.2	.....	.....	.1	.....	.....				
Mean	746	.....	22.1	.....	.....	6.3	28.5	646	.....	13.5	.....	.....	6.8	20.3

II. Average Folds of Five and Ten Strip Sets

Set No.	Set M-X				Set C-X				Set M-Y				Set C-Y			
	Average of 10 strips	Average of 5 strips	% variation	Av. var. of each mach.	Average of 10 strips	Average of 5 strips	% variation	Av. var. of each mach.	Average of 10 strips	Average of 5 strips	% variation	Av. var. of each mach.	Average of 10 strips	Average of 5 strips	% variation	Av. var. of each mach.
1	758	840	11.0	8.4	572	642	12.1	12.9	120	122	1.8	9.8	238	249	4.7	3.1
2	845	922	9.1	....	748	698	6.6	12.9	133	119	10.5	....	224	219	2.2	....
3	879	925	5.1	....	607	728	20.0	....	129	107	17.0	....	241	247	2.5	....
4	901	941	4.2	....	688	633	8.0	7.0	165	152	7.9	8.3	285	259	9.1	7.0
5	985	1069	8.2	....	809	740	8.5	....	193	205	6.1	....	260	233	10.3	....
6	801	721	10.0	....	655	625	4.6	....	138	153	10.9	....	230	226	1.6	....
9	597	605	1.2	8.9	741	907	22.2	12.9	106	117	10.1	11.1	201	198	1.5	12.4
10	631	537	15.0	....	757	785	3.7	....	148	190	28.2	....	184	208	13.0	....
11	596	706	18.3	....	571	688	20.0	....	104	109	4.8	....	193	225	16.6	....
12	669	677	1.2	....	706	747	5.8	....	96	95	1.0	....	178	145	18.5	....
17	978	934	4.4	4.1	741	676	8.7	8.6	241	261	8.1	5.7	268	189	8.0	4.2
18	1050	1089	3.7	....	612	560	8.5	....	239	247	3.3	....	266	267	.3	....
21	692	717	3.6	10.6	648	623	3.9	3.7	127	138	8.7	8.0	201	210	4.3	7.6
22	549	452	17.6	....	693	669	3.5	....	109	106	7.3	....	241	215	10.9	....
23	535	565	5.4	6.9	412	421	2.1	6.5	114	107	6.1	3.7	159	155	2.5	1.7
24	472	512	8.3	....	410	454	10.8	....	80	79	1.3	....	129	130	.8	....
	Mean 7.7				Mean 8.6				Mean 7.8				Mean 6.0			

(6) Number of revolutions per minute—approximately 120.
 It is very important that the tension be 1,000 grams. Herzberg found that the reduction of the tension from 1,000 to 900 grams increased the folding number 126 per cent, 338 per cent when reduced from 1,000 to 800 grams and 714 per cent when reduced from 1,000 to 700 grams. This work was checked and results seem to indicate the great increase in fold by varying the tension. By reducing the tension 500 grams the fold was increased over 1,000 per cent.

The calibration device for spring tension, recommended by the Paper Testing Committee, was very satisfactorily used. The small wheels over which the jaws slide must be working freely and must be changed when they show signs of wearing flat. If these do not rotate easily the jaw rubs against it, creating friction and thereby increasing the tension and lowering the folding value.

The rollers should be carefully inspected and all be moving freely so as to eliminate any friction. They also should be in perfect vertical alignment to obviate a shearing action. It is recommended that the rollers be 0.015 in. from the folding plate and firmly set in this position. A variation of between 0.015 in.

III. Average Per Cent Tolerance

No. strips	M-X	C-X	M-Y	C-Y
10	28.5	20.3	42.6	24.6
5	36.2	28.9	50.4	30.6

and 0.018 in. did not show a very wide discrepancy in results. When the clearance was more than this, great discrepancies were observed, as in the following:

- One paper with a clearance of 0.060 in. gave a fold of 2,555.
- This same paper with a clearance of .025 in. gave a fold of 667.
- Another paper with clearance of .060 in. gave a fold of 471.
- This paper with clearance of .025 gave a fold of 114.
- A third paper with clearance of .060 in. gave a fold of 259, while with a clearance of .025 in. gave a fold of 92.
- A fourth paper with clearance of .050 in. gave a fold of 800, and with a clearance of .025 in. gave a fold of 400.
- The speed of the machine should be regulated to about 120 r.p.m. A slight variation above or below this number does not materially affect the results.

Preparation of Samples

Two sets of samples were prepared. It was thought advisable

to take samples from a roll so that the strips could be taken on consecutive order. The strips were cut from localized areas so that they represented about 6 inches spread on the paper machine. This procedure, it was thought, would limit the error, due to the paper, to a minimum.

Three sets of 10 strips each were sent to the various laboratories. Two sets were to be used in checking the accuracy of the machine and were accurately cut at 65 per cent relative humidity from consecutive portions of the roll. The third set represented a mixed set of strips taken with no intent of localizing the area tested. This would probably more closely represent average working conditions. The paper used in these tests was selected to represent the most common tests obtained in regular practice. One set tested between 100 and 200; and the other set between 500 and 1,000. A 24 lb. folio sheet was taken as any error in adjustment of the machine would show up more on the heavier weight paper.

Testing Conditions

The sensitiveness of paper to varying machine conditions has been proven. It is, therefore, most essential that all tests be run at a definite and constant temperature and relative humidity conditions. The tests tabulated below were all run at a relative humidity of 65 per cent and the papers exposed to this atmosphere for at least two hours before testing.

Data received indicate that all the machines were standardized as previously described before making the tests.

The paper strips were cut with the machine and across the machine which in the tables are represented by "M" and "C" respectively. The high folding paper is lettered "X," the low "Y."

In the first columns of each set (as M to X, C to X, M to Y and C to Y) of Table I are given the averages of each 10 strip set. It will be noticed that in set M to X, these averages run from 472 to 1,050 (touching on all values in between as 500, 600, 700, etc.). This same variation appears in the other sets but not to quite such an extent.

In the second columns are given the per cent deviation of the average of each set from the average of all the sets, and in columns 3 is given the average variation of each machine from the mean of all the sets. It is interesting to note that the machines check one another on an average much better in the cross than in the machine direction. The mean of all the values in columns 3 is computed and represent the actual average variation of tolerance

IV. Tolerances Applied to Miscellaneous Strips

Name	Set M-X			Set C-X			Set M-Y			Set C-Y		
	Av. of misc. on 1 mach.	Av. of all set strips	% variation	Allowable variation	Av. of misc. on 1 mach.	Av. of all set strips	% variation	Allowable variation	Av. of misc. on 1 mach.	Av. of all set strips	% variation	Allowable variation
Strathmore	622	746	-16.7	±28.5	754	646	15.8	+20.3	124	140	-11.5	±42.6
U. S. Testing	488	746	-33.3	±28.5	377	646	-41.6	±20.3	86	140	-38.5	±42.6
A. W. P. Co.	822	746	10.0	±28.5	720	646	11.2	+20.3	148	140	5.8	±42.6
Bur. Chem.	1060	746	41.8	±28.5	771	646	19.2	+20.3	273	140	95.0	±42.6

on these 4 runs of paper. However, to be exact in determining the final tolerance the average individual machine errors must be determined and added to the means of columns 3.

Under the head of individual machine check, columns 4, is given the average of all the sets on each machine. In columns 5 the per cent variation of each set from the average of each machine. These values as would be expected from the previous work done are comparatively low. Columns 6 give the average individual machine errors. The mean of all these errors gives the average machine check on itself. If these machine variations are then added to that of the combined machine check, we have the total possible variation or final allowable tolerance (column 7).

It was thought interesting to note how much more error would be introduced by taking the average of the first five strips run on each set as done in most testing laboratories and comparing to the average of 10 strips. In Table II this data is compiled. Columns 1 give the average of 10 strips; columns 2 of the first strips in the same set and columns 3, the per cent variation of the mean of the 5 from the means of the 10 strip sets. In columns 4 the average variation for each machine is computed for each machine, machines checking on an average as close as 2 per cent and as far as 13 per cent. The means of the average checks of each machine are found, representing another error to be added into the tolerance when 5 strip sets are run.

In Table III the total errors possible for 5 and 10 strip sets are set forth as found for each direction of each paper. In all cases the error in the cross direction is much less than in the machine direction, due most likely as will be explained later to the greater susceptibility of the paper in the machine direction to humidity changes.

Using these tolerances as a basis of comparison the average was taken of 10 miscellaneous strips from various parts of the sample and this average compared to the average of all the set strips (Table IV). The per cent variation in columns 3 should fall within the allowable tolerance. It will be noticed that the values fell well within the tolerance on two machines but of the other two one is consistently above, the other below these limits. As a further check on the value of these tolerances, note the values below (X) which came too late to include in the tables:

	% Variation from		% Variation from		% Variation from		% Variation from	
Humidity 65%	MX	mean	CX	mean	MY	mean	CY	mean
Av. of 10 misc. strips	849	13.8	533	17.5	96	31.4	195	10.5
Av. of 20 set strips..	693	7.2	434	32.8	144	2.9	183	16.0

All of the values but one fell well within the tolerance of Table III.

From a study of the preceding charts the following conclusions may be drawn:

(1) The relative humidity at which the paper is run is the source of greatest error. A difference of 3 to 5 per cent in relative humidity shows a marked variation in results. This conclusion is based on a study of individual tests reported. Great care in reading wet and dry bulb thermometers must be exercised. It is recommended that a standard instrument for determining relative humidity be decided upon.

(2) The error due to paper, machine and method of operations is less in testing the paper cut against the machine direction. It is recommended that paper be tested only in the cross direction and no specification for machine direction fold be given.

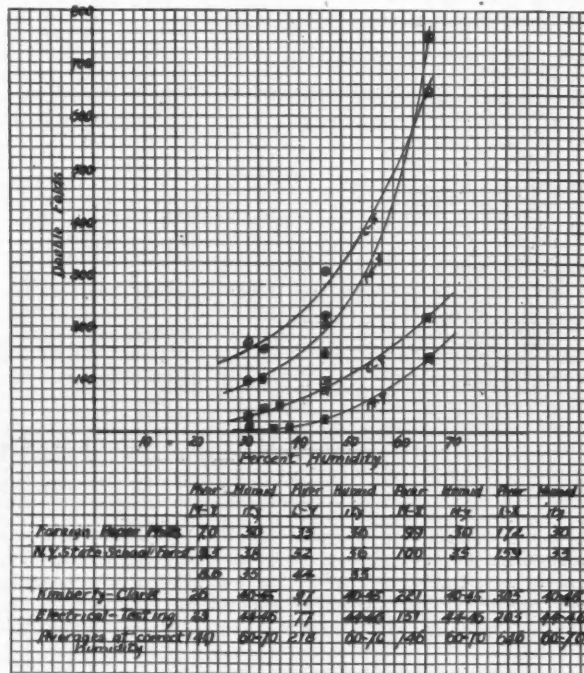
(3) A given machine checks itself within about 10 per cent as a maximum except in an occasional instance. It may be concluded that any folding machine will check itself within approximately 10 per cent. Any wider variation must be attributed to the paper or method of operation.

(4) From results received it seems that a relative humidity of 65 per cent is very difficult for most laboratories to maintain. If

the test is to be used successfully and intelligently should not a relative humidity be taken that can be readily maintained without excessive cost? It is recommended that this be considered. It seems that the error due to relative humidity is more marked between 55 and 70 than between 45 and 55, possibly it would be advisable to run tests at a lower relative humidity.

(5) When it is taken into consideration that from the results of the various laboratories a tolerance of approximately 30 per cent in the cross direction must be allowed, the value of the folding number in purchasing paper on specification is questioned.

(6) It does not seem that a minimum value can be stated as there is no ultimate standard machine to which the paper may be re-



EFFECT OF HUMIDITY ON FOLDING VALUES

ferred and a machine will not check itself within 10 per cent. If a folding number is to be specified it is recommended that a tolerance above and below the number determined upon as being satisfactory be allowed. The following tolerances recommended by F. P. Veitch seem to adequately cover the field:

No. of folds	Tolerance
10—40.....	10
40—100.....	25
100—200.....	50
200—500.....	100
500—1,500.....	250
1,500—3,000.....	500
3,000—Up.....	1,000

(7) It is recommended that some work be done on collecting data before the paper is tub sized. From results obtained by the writer it appears that the engine sized paper is sometimes increased as much as 1,000 per cent by a 4° Be. glue tub size. If this is the case it throws a new light on the value of the folding test. A high folding number may mean a particularly good, even tub size with a moderately good furnish, or it may mean a very good furnish with a moderately good tub size. These two factors would have a distinctly different value as regard the use of the paper. This also might account for the wide variation between individual tests.

Below are a few results on five different grades of bond paper.

Engine sized	After tub size	Per cent increase
76	407	436
41	516	1,160
107	245	129
196	1,030	425
31	92	197

(8) It is recommended that work be done on the folding machine after removing one of the plates in the folding machine. This will give the paper a single fold rather than a double fold.

From the experimental work done by the writer it appears that this may give a very good method for determining the folding value of such papers as book, coated stock and fines where the double fold is too low to be of value. A paper of low double fold may have a high single fold and this may nearly represent the working conditions of the sheet.

	Relative humidity 65 per cent	
Book paper (cross)		
Double fold	4	Ratio 7
Single fold	28	
Laid manifold (cross) bond		
Double fold	46	Ratio 9.5
Single fold	440	
All wood bond (cross)		
Double fold	15	Ratio 9.0
Single fold	142	
All wood writing		
Double fold	8	Ratio 5
Single fold	40	
All wood writing		
Double fold	7	Ratio 5.1
Single fold	34	
Coated paper, 50 lb.		
Double fold	19	Ratio 19.6
Single fold	345	
Coated paper, 60 lb.		
Double fold	24	Ratio 19.7
Single fold	470	
Coated paper, 70 lb.		
Double fold	28	Ratio 20
Single fold	570	

A Definite Ratio

This limited work rather indicated that there is a definite ratio between the single and double fold on different types of paper. It appears that the folding machine may have an added value if it can be applied to low folding papers. The plate may be easily removed, as it is held only by one screw that is easily removable without impairing the machine for use in its regular way.

Until the folding number can be interpreted in terms of manufacturing processes, in the writer's opinion it will be very hard to determine its value in grading paper.

In the case of two papers, having similar folding numbers, which are to be compared, unless a complete chemical test of percentages of rosin, starch and glue present is determined the folding number will not necessarily mean better papermaking material, that is high grade rag stock. When the sizing is determined the paper having the higher fold and lower tub size percentage will show the higher grade of raw material and better manufacturing processes.

Holding Final Product Uniform

It is the writer's opinion, therefore, that the folding number, as it is reported today especially may or may not represent a high quality product. However, for the manufacturing the folding machine holds a distinct place in the making of a certain grade product.

By running folding tests on the engine sized paper, the treatment of the raw material can be very carefully supervised and improperly prepared stock can be corrected, thereby holding the final product uniform.

MULLEN TEST COMPARISON*

By F. A. CURTIS

Last spring, ten sets of selected papers were submitted to ten laboratories for co-operative study of the bursting test. The samples were cut into squares so that five tests could be made on each square and six squares of each sample were sent to the various laboratories. Data were received from seven laboratories as follows:

Sample Number	A. 65%	B. 36%	C. 65%	D. 41%	E. 42%	G. 68%	H. 58%	Mean
1	*12.8	14.3	14.6	12.9	15.2	12.0	15.3	13.87
2	14.1	15.4	17.7	13.8	16.6	13.5	15.5	15.23
3	12.5	12.9	14.3	11.5	13.9	12.5	14.5	13.16
4	27.3	30.8	32.9	27.6	32.6	29.2	32.8	30.46
5	84.5	87.3	90.4	81.8	94.5	84.8	90.3	87.66
6	31.1	36.1	34.1	31.3	38.4	32.4	35.8	34.17
7	32.8	35.8	38.6	35.1	41.0	34.6	39.1	36.71
8	75.9	72.5	80.8	85.8	77.9	73.6	85.3	78.83
9	53.1	55.3	60.1	56.3	61.6	54.6	60.6	57.37
10	83.6	91.3	92.0	86.7	101.5	84.6	93.3	90.43

* These data are the average of 30 individual tests, except in the case of H.

From these data, it is possible to determine the maximum variation of an average of 30 tests from the mean of all the tests. The maximum and minimum values are as follows:

Sample No.	Per cent (+)	Maximum Variation (-)
1	10.3	13.5
2	16.1	11.4
3	10.2	12.6
4	8.0	10.4
5	7.8	6.7
6	12.4	9.0
7	11.7	10.7
8	8.8	8.0
9	7.4	7.4
10	12.2	7.6

* Presented at the Technical Meeting on Paper Testing at the annual convention of TAPPI April 12, 1923.

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It is also possible to determine the percentage deviation from the means of averages of 30 tests as follows.

Sample No.	Average all tests	Means per cent deviation from the average
1	13.87	8.1
2	15.23	8.0
3	13.16	7.0
4	30.46	7.1
5	87.66	4.0
6	34.17	6.5
7	36.71	6.7
8	78.83	7.1
9	57.37	4.9
10	90.43	5.1

The percentage deviation from the average results obtained from the various laboratories, taking an average of the variations of the different samples, is as follows:

Laboratory	Mean per cent deviation from the average
A	7.2
B	2.8
C	5.6
D	7.3
E	6.4
G	6.6
H	6.1

Comparative tests on several Mullen testers in any one laboratory, where the testers are cared for and handled by the same men, will indicate closer check results. It seems very important, however, in view of the wide use of this test, that some attempt be made to standardize the tester and have a definite method of calibration.

CHEMISTRY OF PULPS: A COMPARISON OF THE CHEMICAL CHANGES OF JACK PINE AND ASPEN WOODS COOKED BY THE SODA PROCESS*

By MARK W. BRAY¹ AND T. M. ANDREWS²

This investigation is part of a study of the fundamentals of the chemistry of the alkaline processes.

The object of the work is to show by chemical means some of the changes which take place in wood, such as the relative loss of lignin and cellulose, and the changes in the nature of the cellulose and pulp with duration of the cook.

As it is impossible to obtain representative samples of the pulps during the cooking period, the cooks were blown at definite intervals from the impregnation stage to the finished or well-cooked product. In each of the cooks, as far as possible, all the factors, viz., concentration of the caustic liquor, ratio of caustic to weight

The concentration of the caustic was 96 grams per liter, the ratio of caustic to wood was 20 pounds to 100 pounds, one hour was taken in bringing the cooks to maximum temperature of 170 degrees Centigrade corresponding to a maximum pressure of 100

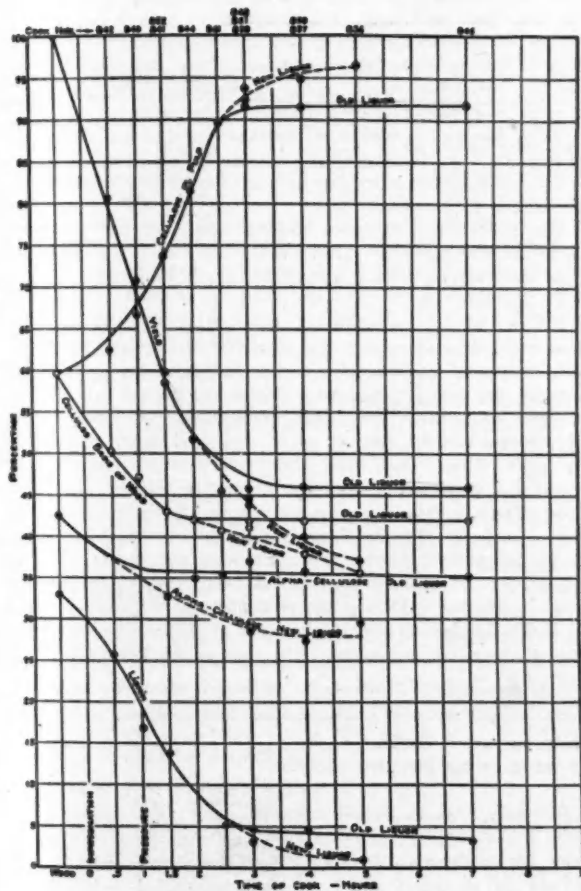


FIG. 1 JACK PINE SODA PULP

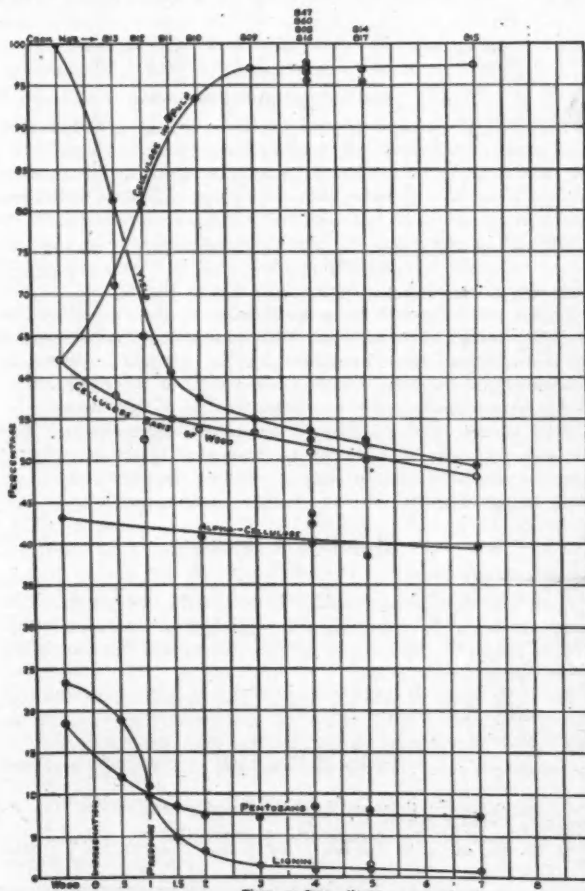


FIG. 2 ASPEN SODA PULP

of wood³ to reach maximum temperature and pressure and weight of wood were kept constant.⁴

* Presented before the Division of Cellulose Chemistry at the 55th Meeting of the American Chemical Society, at New Haven, Conn., Apr. 2-6, 1923.

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³ Cooking data and the analysis of the liquors are given in a report by S. D. Wells and others.

pounds per square inch and enough wood to yield 100 pounds oven-dry was used. Since all these cooks followed as nearly as possible the same curve, the data from the separate cooks could be applied to any similar period during a single cook. Two series were made, one on both jack pine, representative of the broadleaf growing pine woods, and one on aspen, representative of the broadleaf trees.

Experimental Methods

SAMPLING

The products of the cooks were thoroughly washed, shredded by passing through a Williams shredder, and a sample taken for analysis. In the case of the woods and partially cooked woods, the samples were ground until the material passed through a sixty and remained on an eighty mesh standard sieve. The fine material which passed through the eighty mesh sieve was discarded.

Table No. 1—Analytical Data on Jack Pine Series.
Results calculated on basis of oven-dry wood except last two columns.

Pulp sample No.	Cook number	Time of cooking Hours	Yield Per cent	Solubility in 1 per cent alkali			Old Liquor					Cellulose lost		Lignin lost		Ratio A/B	Cellulose in pulp Per cent	Methoxyl in pulp Per cent	
				in hot water Per cent	corrected Per cent	per cent	Lignin Per cent	Cellulose Per cent	Alpha-cellulose Per cent	Beta-cellulose Per cent	Gamma-cellulose Per cent	A Per cent	B Per cent	A Per cent	B Per cent				
86	0	0	100	4.8	10.7	32.8	59.8	42.6	0.0	14.8	0	0	0	0	0	59.8	4.8		
81	842	3/4	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	1.8	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	89.6	....			
91	848	3	45.9	0.2	0.6	4.5	42.0	36.9	0.4	6.8	17.8	28.3	1.6	91.5	....			
90	850	4	46.0	0.3	0.5	4.6	42.0	35.7	0.7	4.9	17.7	38.2	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				

Methods of Analysis

Moisture determinations were made by drying at 105 degrees Centigrade in order 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 degrees Centigrade. 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.⁴ The cellulose, pentosans and methoxyl contents of the samples were determined by the methods reported by Schorger.⁵ The purified cellulose was examined for alpha-, beta-, and gamma-cellulose by the volumetric method of the authors.⁶

With the results of the above enumerated analyses obtained from the different cooks, it is possible to show some of the causes or at least the stages of disintegration or changes that wood undergoes in the alkali cook.

Discussion of Results

CELLULOSE AND LIGNIN

Since time is the only variable in both series the purity of the pulp, as would be expected, will approach a maximum value. This is shown by the increase in the cellulose and decrease in the lignin content of the pulps.

The data given in tables I and II and plotted in the form of curves in figures 1 and 2, show that the greatest chemical change takes place in the wood during the first two hours of cooking at maximum pressure. During this time the pulps rapidly approach

a maximum in quality and purity. Coincident with the initial rapid drop in yield from 100 per cent to 46 per cent for jack pine and to 55 per cent for aspen, the cellulose content of these pulps increases from approximately 60 per cent to 92 per cent and to 97 per cent for jack pine and aspen pulp, respectively. Accompanying this change in cellulose, the lignin content decreases to a minimum value. Beyond this point further cooking of either jack pine or aspen has but little effect on the purity of the pulps. The yield in the case of jack pine reaches a constant value after two hours of cooking, whereas that of aspen continues to decrease slowly with further cooking. This further decrease in yield of aspen pulp is due primarily to destruction of the cellulose and not to further purification of the pulps.

During the early stages of cooking wood, cellulose as well as lignin are simultaneously decomposed. This loss of cellulose takes place even before digester charge has reached maximum temperature and pressure.

The rate of the decomposition of the cellulose is proportionately more rapid than the rate of decomposition of the lignin during the early stages of cooking. Up to one-half hour before maximum pressure has been reached these losses are 9.4 per cent and 7.2 per cent of cellulose and lignin, respectively, for jack pine and 4.3 per cent and 4.5 per cent of cellulose and lignin, respectively, for aspen wood. These data are contrary to the commonly accepted idea, which has been so clearly stated by Surface⁷ as follows: "The effect (cooking) is first to remove the inter-cellular substances and part of the ligneous matters from the wood, then the cellulose itself begins to be attacked, and finally after the greater part of ligneous matters has been removed the cellulose alone is affected." During the remainder of the cooking period the lignin loss becomes larger than that of cellulose and the above ratio (1:1) is not maintained. The ratio of the lignin loss to the

⁴ Ost and Wilkening, Cross and Bevan's "Researches on Cellulose," III, 39, (1905-10); Chemiker Zeitung 461 (1910).

⁵ A. W. Schorger, J. Ind. & Eng. Chem., 9, (1917), 556.

⁶ M. W. Bray and T. M. Andrews, J. Ind. & Eng. Chem., 15, No. 4, (1923.) 377.

⁷ H. E. Surface, U. S. Department of Agriculture, Bulletin No. 80, p. 25.

Table No. 2—Analytical Data on Aspen Series.
Results calculated on basis of oven-dry wood except last two columns.

Pulp sample No.	Cook No.	Time of cook Hours	Yield Per cent	Solubility in 1 per cent alkali			Lignin Per cent	Cellulose Per cent	Alpha-cellulose Per cent	Beta-cellulose Per cent	Gamma-cellulose Per cent	Pentosan Per cent	Methyl pentosan Per cent	Cellulose lost		Lignin lost		Ratio A/B	Cellulose in pulp Per cent
				in hot water Per cent	corrected Per cent	per cent								A Per cent	B Per cent	A Per cent	B Per cent		
354A & B	0	0	100	3.5	16.9	23.4	62.1	43.2	9.3	9.8	18.7	0.1	62.1		
13	813	3/4	81.5	4.7	2.3	18.9	57.9	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	91.0			
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	93.3			
9	809	3	56.0	0.0	1.2	1.4	53.3	41.4	10.0	1.5	7.2	0.0	8.8	22.1	2.0	97.0			
8	808	4	52.5	0.0	1.0	0.9	51.0	40.0	9.2	1.5	8.3	0.0	11.1	22.5	2.0	97.1			
17	816	4	53.2	0.2	1.4	0.8	51.2	40.8	8.7	2.0	8.5	0.0	11.0	22.6	2.0	95.3			
94a	847	4	42.3	0.2	0.4	1.2	41.2	34.3	4.7	0.8	20.9	22.2	1.1	97.4		
116a	860	4	43.5	0.2	0.4	1.1	42.0	36.4	2.5	3.7	20.1	22.3	0.9	96.5		
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			
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		
70a	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			

a Not impregnated with liquor previous to cooking.

cellulose loss for the jack pine and aspen series, respectively, ranges from 1.3 to 1.7, averaging 1.45, and 1.3 to 2.6, averaging 2.0. These values hold a range of time in their respective services, viz., from the point where the cooks are brought up to maximum pressure until the end of the cook. It has been observed that practically the same phenomenon takes place when wood is cooked by the acid process.⁸

Since cellulose is lost as well as lignin during the early part of both the acid and alkaline cooking processes it may be pointed out that, even under refined methods of control, it will be impossible to obtain the yield of cellulose predicated by chemical analysis of the wood. Possibly by means of a substance which would protect the cellulose from hydrolysis, more nearly theoretical yields of cellulose might be obtained.

PENTOSANS

The pentosan content of the aspen wood is rapidly reduced from 18.7 per cent to 7.7 per cent during the first hour of cooking at maximum pressure. Beyond this point the pentosan content remains approximately constant. This minimum value is reached at the time that the maximum purity of the pulp is attained. Although the pulps contain over 97 per cent cellulose they show a content of over 7 per cent pentosans. This indicates that pentosans are present in at least two forms; one readily removed from the cellulose nucleus by hydrolysis, and the other held in more stable combination with the cellulose.

METHOXYL

The methoxyl content of this series of jack pine pulps was determined by Aiyar.⁹ His investigation shows that the reduction in the methoxyl content of the pulps is most rapid during the initial part of the cooking process. It is also shown that there is a very close relation between the lignin and the amount of methoxyl remaining in the pulp, or in other words, the per cent of methoxyl removed is proportional to the per cent of lignin removed. This indicates that the methoxyl content of jack pine is associated with the lignin.

ALPHA-, BETA-, AND GAMMA-CELLULOSE

The results of the examination of the cellulose, derived from the pulps of both the jack pine and aspen series, for alpha-cellulose shows a slow rate of decomposition of this substance with duration of the cook.

The beta-cellulose content of the jack pine pulps is considerably lower than that resulting from the aspen series. This may be accounted for in view of the fact that the cellulose from the latter wood contained beta-cellulose, while that from the former did not.

The gamma-cellulose (calculated on the basis of the oven-dry wood) decreases very rapidly in both series to an almost constant quantity during the first hour of cooking at maximum pressure. The data show that the gamma-cellulose is very rapidly attacked in the soda process. The fact that a constant quantity is found in the cellulose after chlorination of the pulps indicates that some gamma-cellulose is formed during the action of 17.5 per cent sodium hydroxide on the cellulose.¹⁰

SOLUBILITY IN WATER AND ALKALI

The initial rapid decrease in the amount of material soluble in hot water shows that the pulps are more easily washed as the cooking proceeds.

The solubility of the products of the cooks in one per cent sodium hydroxide solution (corrected for water solubility) rapidly reaches a minimum value during the early part of the cooking process in both series. This value decreases from 10.7 per cent to 0.5 per cent in the jack pine series and decreases from 16.9

per cent to approximately 1.0 per cent in the aspen pulps. This practically accounts for the rapid decreases in yield pulp during the first hour of cooking.

EFFECT OF IMPREGNATION

In all of the cooks so far considered the chips were impregnated with caustic liquor prior to starting the cook. In order to demonstrate the effect of the impregnation process on wood, three cooks were made on aspen under the same conditions as those of the series but without previous impregnation of the chips with liquor. These are numbers 847 and 860, cooked three hours at pressure and 830, cooked four hours at pressure. The results show lower yields of pulp and of cellulose than are obtained by the impregnation process. The ratio of the lignin lost to that of cellulose lost is approximately 1:1 at the third hour of cooking. This shows a greater rate of loss of cellulose than obtains in the impregnation process. This is due to the fact that the chips are not as uniformly cooked in the former as in the latter process.

EFFECT OF OLD AND NEW LIQUOR

In the cooks so far considered the impregnation liquor was that which had been used over and over with repeated bringing up to strength by the addition of more caustic soda. Cook number 836 was made by impregnating with new liquor, containing no organic residues from preliminary impregnations. This liquor, each time brought up to volume by the addition of water and refortified with alkali was used for cooks number 837, 838, and 844.

The data plotted in Fig. 1 show that new liquor used for impregnation produces a greater chemical change in the pulp than is obtained with old liquor. With new liquor the yield of pulp does not attain a constant value as in the case of cooking jack pine with old liquor. The pulp resulting has a higher purity, the rate of decomposition of cellulose and of lignin is more rapid, and the cellulose obtained therefrom contains less alpha-cellulose than is obtained from the use of old liquor. This would show that with new liquor the pulp increases in purity of cellulose at the expense of yield, as the cook proceeds beyond the point where old liquor ceases to act on the wood. As would be expected the application of fresh white impregnation liquor would have a more drastic solvent action on the wood than would obtain after the impregnation liquor becomes saturated with woody materials, gums, and resins. New liquor tends to remove the alkali soluble portion of the wood leaving a smaller amount of actual wood substance to be cooked. This is equivalent to increasing the ratio of caustic to weight of wood. Therefore, if the wood were approximately 10 per cent soluble in the impregnation liquor, instead of cooking with 20 pounds of caustic to 100 pounds of wood, one is actually cooking 90 pounds of wood with 20 pounds of caustic.

Summary

The chemical changes which take place in jack pine and aspen wood have been studied.

Under the conditions of the experiment, the rate of the chemical changes taking place in the woods was greatest during the initial part of the cook. At the second hour of cooking or after one hour at maximum pressure the process is practically complete.

Cellulose begins to decompose very appreciably one-half hour before maximum pressure has been reached at a temperature of 110° C.

During the early stages of cooking, cellulose decomposes at a greater rate than does lignin. Later on in the cook the rate of lignin removal is greater than that of cellulose.

The pentosan content of aspen is reduced rapidly during the early stages of the cooking process to a constant value, 7.7 per cent.

The pentosans are present in the wood in at least two forms; one readily removed from the cellulose nucleus by hydrolysis, and the other held in more stable combination with the cellulose.

⁸ M. W. Bray and T. M. Andrews, *PAPER TRADE JOURNAL*, 76, No. 3, (1923), 49.

⁹ S. S. Aiyar, "A Study of the Distribution of Methoxyl (of the wood) in the Products of Different Treatment of Wood." Presented before the Division of Cellulose Chemistry at the 64th meeting of the American Chemical Society, Pittsburgh, Pa., Sept. 4-8, 1922.

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Section of the
COST ASSOCIATION OF THE PAPER INDUSTRY
Affiliated with
THE AMERICAN PAPER AND PULP ASSOCIATION
 Conducted by **THOS. J. BURKE, C.A., Sec-Treas**

COST CONVENTION, CLEVELAND, MAY 24th AND 25th

A splendid program is being arranged for the convention of the Cost Association of the Paper Industry at Cleveland, May 24-25.

Dr. Hugh P. Baker, executive secretary of the American Pulp and Paper Association has already arranged to address those present to urge support of the fundamental work which the Cost Association is carrying on in the pulp and paper industry. He has kindly consented to make this address in view of the fact that the Cost Association is closely affiliated with the American Pulp and Paper Association, and is working closely with it. An invitation has also been extended to Henry W. Stokes, president of the American Pulp and Paper Association, to address the convention.

Steam Costs and Their Distribution

In view of the fact that hundreds of thousands of dollars could be saved annually by pulp and paper manufacturers if proper attention were paid to steam costs and their distribution, the Cost Association believes it is rendering a distinct service to the industry by stressing at this time, when it so important that every possible step should be taken to keep down costs, by getting two of the best available speakers on this subject.

An article which appeared in this section recently entitled "Executive Control Over Steam Costs," aroused a great deal of interest in the industry. A second article by the same writer will appear shortly. The third of the series will be delivered in person by S. H. Childs, B. S. Chem. E., who will speak on this subject from an outside viewpoint.

An address has also been arranged for on the same subject by a speaker within the industry. He is well known as one of the best engineers in the industry and will tell what is being done with regard to steam costs at the Nekoosa-Edwards Paper Company's mills. E. P. Gleason will have a message to deliver which should be heard by every cost accountant who has the interest of his mill at heart. Not only this, but he should be heard also by all pulp and paper executives who are seeking to stop the big leaks and keep down their costs. There never was a time when it was so necessary to do this. Everybody has agreed that a run-away market at this time would be detrimental to the industry and, yet, in view of the manner in which costs are rising at the present time, it is somewhat difficult to see how manufacturers can keep down their selling prices unless they make very strenuous efforts in the direction to improve their manufacturing efficiency, wherever it is possible to do this.

Need for Examination of Payrolls

From a review made recently by the National Industrial Conference Board for the American Paper and Pulp Association, it

would appear that at present there is not a shortage of labor in the pulp industry. There is, however, a great need for a careful examination of payrolls for the purpose of discovering whether the rates being paid on the different jobs are equitable.

A very fine address was made at the convention held by the Technical Association recently, by H. P. Carruth of the Mead Pulp and Paper Company, on "Methods of Establishing Wage Rates and Determining Promotions." This address will be printed shortly and should be read by all executives, without exception, in the industry. An invitation has been extended to Mr. Carruth to make a similar address at this convention in order that the executives and cost accountants may have an opportunity similar to that given to the technical men to hear an address which is, perhaps, of more interest to them than to anybody else. Should Mr. Carruth not be able to accept this invitation, copies of the address which he gave at the Technical Convention will be distributed to those attending the Cost Convention.

Other speakers will be George E. Frazer, of Frazer & Torbet, Chicago, an excellent speaker and expert on cost work, and Alexander Wall, secretary of the Robert Morris Associates, who will speak on "Financial Statements and their Analysis for Executives."

Separate Group Meetings

As usual, separate group meetings will be held and forms which will permit of the collection of statistics relating to "conversion costs," presented and explained. This is a matter which the Cost Association has been pushing for the past year. It should be taken up immediately and strenuously by executives and cost accountants in every group in the industry. When such figures are available, they will permit executives to compare their efficiency with their competitors and thus put them in possession of vital information for the success of their business. It is being extensively done in other industries with much success and there is no reason legally or otherwise, why the pulp and paper industry should not carry on this work. In order that it may be successful, however, it is essential that executives themselves should get behind it and help us in "putting it over."

If, owing to other engagements executives cannot attend the convention, they should authorize their representatives to make definite arrangements at these group meetings to co-operate in this work.

Our only aim is to assist you to make profits as well as paper, so if you cannot come yourself and bring your cost man along, at any rate send your cost accountant and authorize him to act in your absence.

THE RELATION OF COST ACCOUNTING TO PRODUCTION ENGINEERING*

By F. RICHMOND FLETCHER SCOVELL, WELLINGTON & Co., BOSTON, MASS.

Not many years ago cost work consisted of compiling the costs of labor, material, and burden, expended upon individual manufacturing orders, or expense numbers. To establish this information it was necessary to install time cards and material requisitions, and to fix rates for the inclusion of burden in cost.

As this practice developed it became evident that storerooms and stock records were needed to ensure proper control of materials and provide a check upon the total material charged to cost. Time cards made out by workmen or foremen proved to be inefficient and inaccurate, and factory clerks or timekeepers were introduced to ensure prompt and accurate records of time spent on orders and expense items. Burden rates based on approximate estimates of total overhead, and figured on the value of productive labor, usually proved inadequate or unfair and were replaced by departmental rates, determined upon careful budgeting of the expenses, and based on machine hours, man hours or productive units, whichever fitted the particular situation.

At about this stage in the evolution the cost clerk blossomed out as a cost accountant, for management had begun to recognize the importance of having cost figures tied in and controlled through the general ledger and had found a practical use for monthly statements of loss or gain.

Differences in Manufacturing Cost

It was not long after cost accounting had made possible these monthly statements of loss or gain before management began to question why there were such tremendous differences in the manufacturing cost of the same product at different seasons. Investigation of completed orders disclosed wide variances in the cost of material, labor and particularly burden, but provided no adequate reason and no promise of future stability.

The cost accountant knew his figures were right, and could prove their accuracy through his accounting control. In spite of this, management was not satisfied, and shortly the engineer came upon the scene who was introduced to find out why these differences occurred.

First, the general line of product was investigated, and items of a similar nature were grouped. Next each product was analyzed, to determine the raw materials and finished parts needed in its assembly. Labor was then analyzed to determine the hours of labor and the tools and machines required to process the several parts in each operation. The factory equipment was also investigated to determine the normal productive hours of each machine. The cost department was called upon for a statement of the annual cost of factory expenses based upon a full operating year.

The sales department was then asked to provide an estimate of the probable sales, in quantities, of each item, in the line, by months. A balance was then struck between the sales requirements and the factory capacity, so as to establish definite limits and indicate the need of changes in the sales department's program of the purchase of additional equipment for the factory.

Manufacturing costs were recast upon the detail of materials and labor operations which, according to drawings, material lists, and operation schedules, were standard requirements, and burden was included in accordance with normal factory capacity. Under this plan, the sales department was assured a uniform standard factory cost for each product.

Capacity of Factory Determined

The research work conducted by the engineer had determined

*From "N. A. C. A. Bulletin."

COST SECTION

the capacity of the factory in its various departments and shown where congestion was likely to occur. The analysis of materials and parts established what the purchases should be and what stores of parts and partial assemblies were necessary to maintain the production called for by the sales department. The development and distribution of burden charges definitely determined the burden cost in each operation, based upon normal conditions, and provided for the absorption of over- or under-earned burden created by abnormal conditions separately from factory costs. The determination of factory capacity created limits upon which the sales department could build a schedule of deliveries.

These facts and figures brought a new conception of the goal of management—that is, the maximum use of every opportunity for better service and greater profits through increased production and reduced cost. A budget was prepared, based upon a reasonable forecast of probable sales. Manufacturing costs for each product and its component parts were known as standard costs, based on the predetermined production schedule. The necessary investments in equipment, in materials, in labor payrolls, and in operating expenses, were charted in such a manner that actual performance could be compared with the predetermined standards and causes for variances clearly defined as the work progressed. Administrative and selling expenses were forecasted in a similar manner, and provision was made for determining all variations at least once a month.

Under this plan the factory stood to make a profit or loss on its turnover to the sales department. Cost accounting took on a new meaning, one of usefulness, for where manufacturing costs had been previously known only after an order had been completed—too late to correct or even point out the difficulty—costs now were collected to establish variances from standards and were used in the factory to locate the particular operation, or the kind of material, or the part where each variance occurred. This information again provided a basis for further research through which the correctness of the original standards could be determined, by analysis of the causes of the variances.

Fundamental Relationships

The fundamental relationship between the production engineer and the cost accountant, therefore, is that the setting of standards is part of the work of the production engineer, whereas the accumulation of actual costs in comparison with the standards is part of the work of the cost accountant.

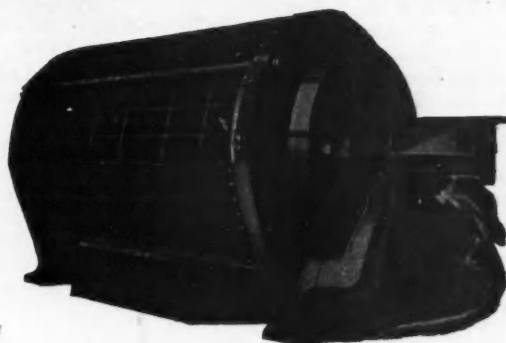
In accumulating costs against standards, the cost accountant should not look upon himself as collecting information merely for the management; he should also bear in mind that he is gathering it for the factory; inasmuch as the factory has every right to know how its performance has met the established task and wherein it has fallen short or bettered the mark. Foremen who are capable of directing departments are entitled to all the information that will assist them to maintain the most efficient and economical administration of their activities. There is no man—be he superintendent, foreman, or workman—who has lost his inherent interest in bettering a task or beating a standard if the mark is understood and within the realms of possibility.

The factory is too often neglected on this score of information, and too few managers appreciate that real team work requires a knowledge of the signals by every man who is to take part in the game. The work of the production engineer cannot be successfully executed without intelligent co-operation of the foremen, and greatest effectiveness is where the factory understands the relationship

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between the way he plans and the way the cost accountant checks the execution of such plans.

The function of cost accounting is not primarily to reduce costs but rather through a knowledge of what costs should be, to indicate causes for idle time, extra operations and wasted materials; and to account properly for the cost of unused capacity.

Bound to Lead to Unsound Policies

The idea held by many managers that the product of the factory, in dull periods, must carry the total expense which would be borne by the product when all departments are on full time, is bound to lead to unsound business policies. Intelligent cost-keeping applies only a part of the total burden to the manufacturing cost of the product made during periods of curtailed production, the part chargeable being the same percentage of the total burden as the curtailed production is of the standard production.

Causes of excess, or of idle time, the cost of waste in materials, and the cost of unused capacity, are of vital importance to the superintendent, the general manager and the sales manager, for here is a direct charge against profits to test the ability of management.

To the superintendent and foremen this information is a spur to greater efforts to overcome the losses that are within their control. To the general manager, idle capacity means idle capital, and the information is of tremendous importance in developing financial and general business policies. To the sales manager, unused capacity means a call to action, a challenge to salesmanship and a need for certain orders which, even though sold at no profit, will add greatly to net profits by removing this loss.

To the production engineer variances in cost, due to conditions within the factory, bring a warning that something is wrong, either with the standards or with the actual cost. His problems never end, and his standards are useful only until they can be bettered.

Cost accounting and production engineering belong together in the factory office, for these are joint functions for the service of both factory and management. Cost accounting alone cannot justify its existence; but when properly linked up in an organization, where each function is correlated with others, it becomes with them the essence of management in forming, instructing, and clearing the way, for increased profits and better business.

SUPERHEATED STEAM

In the paper mill we often hear the term "superheated steam." Some of the men who have little to do with the steam plant may get the idea that it is a highly refined and scientific product of mysterious and complex equipment. It is merely steam made "extra hot" by passing it through a heated pipe system, so that it will carry more heat to its work and will not condense into water on its way to work.

There is no doubt that the prefix "super" enjoys a rather more scholarly association than it is justly entitled to. When we find it in a connection that has not been fully explained, we are apt to think of super-men and super-human and super-natural and super-power and other things above our heads that are altogether more strange and rare, or at least more vast and momentous, than they would be with the "super" left off. Perhaps if it were a general habit to call superheated steam "extra hot" steam or some similarly homely name, there would be less of a popular tendency to regard it as a "super" scientific development suited only to power plants that are the last word in modern appointment.

Economy to Use It

For there is undeniably that tendency. Nothing demonstrates it better than the fact that only about 5 per cent of all the steam-generating units in the country, large and small, use superheated steam, despite the fact that all of the other 95 per cent would gain in economy by using it. And naturally, it is the biggest and most intrinsically economical plants—instead of the ones that need its savings most—that do use it.

However "scientific" the operating principles of a super-heater may be, as a piece of equipment to be installed in a new or old plant, nothing could be much simpler. As a matter of fact, the whole device can be explained in a sentence: The hot steam from the boiler is run through a still hotter pipe before it is used. That is all, essentially, there is to it.

But to make the arrangement even more simple, and more economical, the "still hotter pipe" is made hot by installing it inside the boiler furnace, where the furnace gases can strike it on their way up the chimney. And these are waste gases, please note; if the super-heater pipes are not there to catch them, they escape and are lost altogether. So it costs nothing to heat a superheater, but, on the contrary develops a value where there was a loss before.

Not a Complicated Mechanism

A superheater, therefore, far from being a complicated mechanism, is something that can readily be added to any steam plant that is in

operating order. And once it is added, and super-heated steam is doing the work that was formerly done by ordinary saturated steam, economies immediately become apparent all along the line, from the consumption of fuel to the consumption of steam in the engine.

It is not quite so easy to explain why super-heated steam is a more economical vehicle of energy than saturated steam, but it is fairly simple. In the first place, it is well understood that heat is the energy, not steam; so the more heat the steam carries, the more work it does.

Water, the commonest of materials, has some peculiar characteristics, with which everybody is familiar, but on which few have occasion to expend any thought. With a falling temperature, when 32° F. is reached the liquid changes at once to a solid; but the instant the temperature rises again it changes back. Going up, when 212° F. is reached, the liquid changes to a gas or vapor; but as soon as the temperature drops again a fraction of a degree, it changes back to a liquid.

That figure of 212°, the vaporizing temperature going up and the condensing temperature going down, is correct, of course, only at "atmospheric" pressure, which means no pressure at all so far as our non-technical viewpoint is concerned. Evaporate the water in a closed vessel under pressure, as in a power plant's steam boiler, and the temperature will be considerably higher than 212° before the "boiling point" is reached. At 100 lb. pressure for instance, the boiling temperature of water is about 338° F., at 150 lbs. it is about 366° F.

But the variation in boiling point makes no difference in the fact that as soon as the temperature drops a fraction of a degree, condensation begins; the gas starts to turn back to a liquid. For so long as the pressure remains unchanged the boiling point is also the condensing point.

How Money Is Lost

The owner of a power plant pays good money for fuel to change a liquid into a vapor that he can use to run his establishment. When part of the vapor persists in turning back into a liquid before it can be used, he loses a proportionate part of that money. And further the liquid water of condensation makes a good deal of trouble because it is in the pipes and equipment where only steam ought to be; and when it is drawn out, being still hot, it wastes a considerable amount of heat energy, unless means be provided to return it to the boiler.

**Let Them Drink
to your
business health in cups you sell**

each drink a cup—each cup a sale for you and at lowest cost of any cup on the market.

At such prices **SALES RESISTANCE IS NEGLIGIBLE** and our direct advertising assistance in your city will get immediate results as it is now doing in many cities.

Burt's Paper Drinking Cups are made of fine white paper, without wax to make drinks taste, and are reinforced so holders are not necessary. They are kept under glass and cannot be wasted or soiled before use.

Cups retail at one fourth cent—dispensers at five dollars.

F. N. Burt Company, Ltd.
Paper Cup Division
Buffalo, N. Y.

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of
PAPER AND PULP**

has come an increasing demand for more accurate recording instruments. To obtain a better and more uniform product, Recording Instruments of recognized accuracy are most essential. Plant efficiency therefore becomes greatly improved.

TRADE MARK
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Recording Instruments have played a most important part in the process of developing paper and pulp manufacture; they not only have added to plant efficiency, but have assisted materially in arriving at manufacturing costs.

BRISTOL'S RECORDING INSTRUMENTS

give the operator of any process an accurate knowledge as to just what arises and to what extent the process is taking place. They equip him with the filing record in the varying conditions of paper and pulp mills, as they enter into each process and give to the superintendent such reliable information as to enable him to know at all times the best conditions under which to operate to obtain certain results.

There are many uses for Bristol's Recording Instruments in paper and pulp mills, too numerous to mention.

Our Bulletin "B. E. 303" describes our complete line of Recording Instruments which should be of interest to every pulp and paper mill. We will be pleased to send it to you. The most extensive line of Recording Instruments in the world are made by

THE BRISTOL COMPANY
WATERBURY, CONN., U. S. A.

Super-heated steam, as already seen, is simply steam that has been heated away above its boiling point or condensing point. Therefore it does not condense until it has been cooled a good deal. For instance, if steam at 100 lbs. is used, the temperature of ordinary saturated steam would be 338°, it would not begin to condense. But if it were heated to say 438°, it would not begin to condense until it had dropped a full hundred degrees. The pipes and the engine will not cool it off that much, and so it will not condense at all until it is through with its work. In modern power-plant practice it is not unusual to heat the steam to a temperature 250° higher than its boiling point, with a corresponding increase in economy.

When a super-heater is installed in connection with either an old or a new boiler plant, both the fuel consumption and the water consumption are reduced by amounts ranging up to 25 per cent, in comparison with the performance of the same equipment without a super-heater. That means, of course, that the same plant can be made to do more work; its capacity has been increased. As a rule six boiler units with super-heaters will do the work of seven units without superheaters. And that means a corresponding reduction in the necessary size of all the rest of the equipment and plant.

Typical Performance

Typical of the performance of a superheater installation in an old plant of ordinary character is the experience of the Nickel Plate Railroad in its Connecticut, Ohio, shops. Here three 180-hp. hand-fired boilers, burning coal and sawdust, operated a 150-hp. Corliss engine, a 175-kw. engine generator, a 75-hp. engine, an air compressor and pumps, and two steam hammers. Careful tests showed that the coal consumption decreased 26.7 per cent, and the steam consumption 20 per cent, while the efficiency of boiler, furnace and grate increased 21.2 per cent as a result of the superheaters' operations.

Waste

A chart presented herewith which shows at a glance how important it is for any of you handling oil or any other liquid product to make sure that all valves are closed tightly.

The average man in handling oil or in fact any liquid is more or less prone to disregard small leaks no doubt thinking that the loss of a drop of oil or liquid is not so very important. By studying this chart you can readily see that this drop when taken in the aggregate over a period of time means a real waste of money. On top of this, when you take into consideration that we are probably handling from ten to fifteen different kinds of oils and liquids at all times this waste increases enormously.

Take for an example the first illustrated leak of one drop per second. With a gallon of oil costing thirty cents (Some of the oil in use is nearer three times this amount) the loss represents a waste of approximately thirty-four cents per day. Or in other words this loss of thirty-four cents added to your daily wage represents the actual cost of your job to the company. You wouldn't throw 30 cents or 40 cents in cash into the waste pile, yet every valve not tightly closed is the same as throwing away that much money.



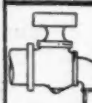




This, of course, is only one example of waste which occurs in a paper mill and we are by no means singling out the oiler alone. The carpenter, millwright, electrician, pipefitter, in fact everyone is at times responsible for his share of waste.

The days when lumber and building materials were cheap, have passed. Common lumber is now costing 3 cents to 5 cents per board foot, each foot thrown away or wasted therefore counts up.

Pipe and fittings are now costing three times as much as formerly. Many times old pipe and fittings can be used on a particular job, but are put aside or ignored and new material is used. That this is a fact can easily be checked up by paying a visit to our so-called "Storage Warehouse." Fittings and valves of every

known known size, description, and kind will be found here. These were salvaged from old installments and on account of their being rusty and attached to short pipes, have been put in this shed and forgotten. They, however, are still serviceable and can be used on low pressure lines. Appearances, if necessary, can always be helped with a coat of paint.

With pipe also—short pieces thrown away instead of being worked into nipples or threaded and put together for less important work. They certainly are more valuable this way than if

AMOUNT OF OIL LOST DUE TO SMALL LEAKS			
	1 MINUTE	LOSS IS	1/2 OUNCE
	1 HOUR	" "	6 OUNCES
	1 DAY	" "	1 GALLON & 1 PINT
	1 WEEK	" "	8 GALLONS
	1 MONTH	" "	34 GALLONS
	1 MINUTE	LOSS IS	1 OUNCE
	1 HOUR	" "	20 OUNCES
	1 DAY	" "	3 1/2 GALLONS
	1 WEEK	" "	24 GALLONS
	1 MONTH	" "	2 BARRELS
	1 MINUTE	LOSS IS	2 OUNCES
	1 HOUR	" "	1 GALLON
	1 DAY	" "	24 GALLON
	1 WEEK	" "	3 1/2 BARRELS
	1 MONTH	" "	14 BARRELS
	1 MINUTE	LOSS IS	7 1/2 OUNCES
	1 HOUR	" "	3 1/2 GALLONS
	1 DAY	" "	84 GALLONS
	1 WEEK	" "	11 1/2 BARRELS
	1 MONTH	" "	50 BARRELS
	1 MINUTE	LOSS IS	23 OUNCES
	1 HOUR	" "	11 GALLONS
	1 DAY	" "	260 GALLONS
	1 WEEK	" "	36 BARRELS
	1 MONTH	" "	156 BARRELS
	1 MINUTE	LOSS IS	39 OUNCES
	1 HOUR	" "	18 GALLONS
	1 DAY	" "	8 1/2 BARRELS
	1 WEEK	" "	60 BARRELS
	1 MONTH	" "	255 BARRELS
	1 MINUTE	LOSS IS	83 OUNCES
	1 HOUR	" "	39 GALLONS
	1 DAY	" "	18 1/2 BARRELS
	1 WEEK	" "	130 BARRELS
	1 MONTH	" "	555 BARRELS

sold as scrap iron. If you should ever visit an up-to-date scrap yard you will find that such pieces and parts are separated and put aside to be sold as usable material to second hand dealers and wrecking companies at very much better prices than scrap. This probably is the reason why practically all scrap dealers are wealthy. If these people can use these pieces—why can't we?—The Marathon Runner, of the Marathon Paper Mills Company.

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| DIESEN | Bleached Sulphate |
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| KROGSTAD | Easy Bleaching Sulphite |

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NEW YORK IMPORTS

WEEK ENDING MAY 5, 1923

SUMMARY

News Print	2,902 rolls, 797 bls.
Wrapping Paper.....	1,303 bls., 527 cs., 12,595 rolls.
Wall paper	169 bls., 2 cs.
Hangings	29 bls., 3 cs.
Printing Paper	41 cs.
Filter Paper	40 cs.
Fenestra Paper	17 cs.
Drafting Paper	11 cs.
Tissue Paper	37 cs.
Packing Paper	3,796 bls., 1,021 rolls, 7 cs.
Cigarette Paper	40 cs.
Writing Paper	67 cs.
Blueprint Paper	2 cs.
Drawing Paper	42 cs.
Colored Paper	105 cs.
Litho Paper	40 cs.
Coated Paper	78 cs.
Miscellaneous Paper.....	654 rolls, 679 bls., 210 cs., 423 bdls.

CIGARETTE PAPER

Zorro Tobacco Co., Britannia, Marseilles, 11 cs.
Knauth Machod & Kühne, Pres. Wilson, Trieste, 4 cs.
G. A. Henshaw & Sons, Adriatic, Liverpool, 21 cs.
J. V. Lago, Monte Grappa, Alicante, 4 cs.

WALL PAPER

A. C. Dodman, Jr., Mauretania, Liverpool, 2 bls.
A. C. Dodman, Jr., by same, 2 cs.
State Forwarding & Shipping Co., President Harding, Bremen, 146 bls.
M. J. Corbett, Mt. Carroll, Hamburg, 1 cs.
R. F. Downing & Co., Meltonian, London, 20 bls.

PAPER HANGINGS

W. H. S. Lloyd & Co., by same, 29 bls.
W. H. S. Lloyd & Co., by same, 3 cs.

NEWS PRINT

Newsprint Paper Corp., Kungsholm, Gothenburg, 319 rolls.
M. Gottesman & Co., Inc., by same, 333 rolls.
Chemical National Bank, Orbita, Hamburg, 383 rolls.
Chemical National Bank, Minnekahda, Hamburg, 57 rolls.
H. Reeve, Angel & Co., Westerner, Antwerp, 782 rolls.
H. Reeve, Angel & Co., by same, 797 bls.
Bulkeley, Dunton & Co., by same, 182 rolls.
Parsons & Whittemore, Pres. Harding, Bremen, 836 rolls.
M. Gottesman & Co., Inc., by same, 20 rolls.
H. Reeve, Angel & Co., Homer City, Hamburg, 355 rolls.

PRINTING PAPER

B. F. Drakenfeld & Co., Adriatic, Liverpool, 41 cs.

FILTER PAPER

E. Fougera & Co., Homeric, Bordeaux, 40 cs.

FENESTRA PAPER

Birn & Wachenheim, Mauretania, Liverpool, 17 cs.

DRAFTING PAPER

Bigelow Hartford Carpet Co., Adriatic, Liverpool, 11 cs.

TISSUE PAPER

F. C. Strype, by same, 29 cs.
Iwai & Co., Hague Maru, Kobe, 9 cs.

WRAPPING PAPER

Wilkinson Bros. & Co., Inc., Waukegan, Rotterdam, 226 bls.
Wilkinson Bros. & Co., Inc., by same, 50 cs.
Wilkinson Bros. & Co., Inc., by same, 2,442 rolls.
Wilkinson Bros. & Co., Inc., Editor, Rotterdam, 1,093 rolls.
Wilkinson Bros. & Co., Inc., by same, 318 bls.
Wilkinson Bros. & Co., Inc., by same, 419 cs.
Maurice O'Meara Co., Mt. Carroll, Hamburg, 311 bls.
Foreign Paper Mills, by same, 51 bls.
Foreign Paper Mills, by same, 286 rolls.
Republic Bag & Paper Co., Orbita, Hamburg, 8,100 rolls.
Wilkinson Bros. & Co., Inc., by same, 50 rolls.
Wilkinson Bros. & Co., Inc., by same, 11 bls.
Wilkinson Bros. & Co., Inc., by same, 58 cs.
Arkell Safety Bag Co., Kungsholm, Gothenburg, 388 rolls.
Arkell Safety Bag Co., by same, 6 bls.
Hudson Trading Co., Stavangerfjord, Kristiania, 23 rolls.
International Acceptance Bank, by same, 213 rolls.
International Acceptance Bank, by same, 380 bls.

PACKING PAPER

Publicity Paper Corp., Orbita, Hamburg, 6 bls.
Republic Bag & Paper Co., by same, 2,620 bls.
Republic Bag & Paper Co., by same, 526 rolls.
J. P. Hefferman Paper Co., by same, 141 bls.
Jordan Marsh Co., Pres. Wilson, Trieste, 31 bls.
Ladenburg, Thalman & Co., by same, 375 bls.
Mischel & Williams, by same, 221 bls.
Republic Bag & Paper Co., by same, 127 bls.
Republic Bag & Paper Co., Minnekahda, Hamburg, 261 bls.
Republic Bag & Paper Co., by same, 495 rolls.
Globe Shipping Co., Rotterdam, Rotterdam, 7 cs.
Wilkinson Bros. & Co., Inc., Pesiari, Antwerp, 14 bls.

WRITING PAPER

Judson Freight Forwarding Co., by same, 15 cs.
Judson Freight Forwarding Co., Pres. Wilson, Trieste, 52 cs.

BLUEPRINT PAPER

Lithoprint Co., Rotterdam, Rotterdam, 2 cs.

DRAWING PAPER

Keuffel & Esser, M't. Carroll, Hamburg, 42 cs.

COLORED PAPER

E. Dietzgen, Homer City, Hamburg, 105 cs.

LITHO PAPER

Ault & Wiborg, Moorish Prince, Hong Kong, 40 cs.

COATED PAPER

Globe Shipping Co., Pres. Harding, Bremen, 78 cs.

PAPER

J. P. Hefferman Paper Co., Kungsholm, Gothenburg, 140 bls.
H. Reeve, Angel & Co., by same, 3 cs.
C. K. MacAlpine & Co., by same, 423 bdls.
C. K. MacAlpine & Co., by same, 209 rolls.
T. Barrett & Son, by same, 49 bls.
Manitou Paper Co., Orbita, Hamburg, 221 rolls.
Fernstrom Paper Co., Inc., by same, 36 rolls.
Richardson Bros., Minnekahda, Hamburg, 45 cs.
F. L. Kramer & Co., Pres. Van Buren, London, 4 cs.
Japan Paper Co., America, Genoa, 85 cs.
Steiner Paper Corp., Homer City, Hamburg, 59 cs.
Fernstrom Paper Co., Inc., by same, 198 rolls.
Import Paper Co., by same, 14 cs.
Great Eastern Paper Co., Bayern, Hamburg, 376 bls.
Grat Eastern Paper Co., Dania, Hurum, 114 bls.

RAGS, BAGGINGS, ETC.

E. J. Keller Co., Inc., Lapland, Antwerp, 64 bls. flax waste.
E. J. Keller Co., Inc., by same, 1 bl. jute waste.
E. J. Keller Co., Inc., Thuringia, Hamburg, 27 bls. thread waste.
E. J. Keller Co., Inc., by same, 28 bls. bagging.
E. J. Keller Co., Inc., by same, 66 bls. rags.
E. J. Keller Co., Inc., Francisco, Newcastle, 158 bls. rags.
E. J. Keller Co., Inc., Pres. Wilson, Trieste, 95 bls. rags.
New York Trust Co., by same, 80 bls. rags.
Farmers' Loan & Trust Co., Tuscania, Glasgow, 25 bls. paper stock.
National City Bank, London Commerce, London, 353 bls. waste paper.
State Bank, by same, 154 bls. rags.
Reis & Co., Waukegan, Rotterdam, 67 bls. cotton waste.
E. Butterworth & Co., Inc., Pres. Van Buren, London, 179 bls. paper stock.
M. O'Meara Co., Cubano, B. Aires, 58 bls. rags.
H. Schimmel, Westerner, Antwerp, 111 bls. cotton waste.
Reis & Co., by same, 287 bls. cotton waste.
Adams, Leland Co., by same, 27 bls. thread waste.
Brown Bros. & Co., by same, 289 bls. rags.
E. J. Keller Co., Inc., by same, 105 bls. rags.
E. J. Keller Co., Inc., by same, 161 bls. bagging.
Guaranty Trust Co., Pres. Harding, Bremen, 8 bls. rags.
Ayres Oddy & Co., Hektor, Barcelona, 85 bls. cotton waste.
Reis & Co., Editor, Rotterdam, 152 bls. cotton waste.
Royal Manufacturing Co., by same, 29 bls. thread waste.
Katzenstein & Keene, Inc., Elmsport, Rotterdam, 351 bls. rags.
Katzenstein & Keene, Inc., by same, 51 bls. new cuttings.
Penn Rag & Metal Co., by same, 268 bls. bagging.
E. Butterworth & Co., Inc., by same, 51 bls. paper stock.

Wilkinson Bros. & Co., Inc., by same, 32 bls. paper stock.
Castle & Overton, by same, 194 bls. rags.
S. Silberman, by same, 243 bls. bagging.
S. Silberman, by same, 43 bls. old wipers.
Waste Material Trading Corp., by same, 641 bls. bagging.
E. J. Keller Co., Inc., by same, 39 bls. cotton.
E. J. Keller Co., Inc., Homer City, Hamburg, 14 bls. rags.
E. J. Keller Co., Inc., by same, 160 bls. rag pulp.
Salomon Bros. & Co., by same, 61 bls. rags.
Salomon Bros. & Co., by same, 353 bls. jute and flax waste.
Guaranty Trust Co., by same, 223 bls. rags.
L. H. Abenheimer, by same, 62 bls. cotton waste.
Reis & Co., by same, 530 bls. cotton waste.
Katzenstein & Keene, Inc., by same, 52 bls. rags.
Katzenstein & Keene, Inc., by same, 82 bls. bagging.
Katzenstein & Keene, Inc., Breiz Izel, Havre, 52 bls. rags.
Katzenstein & Keene, Inc., by same, 21 bls. bagging.
Salomon Bros. & Co., Olen, Havre, 71 bls. thread waste.
Salomon Bros. & Co., Chicago, Havre, 76 bls. rags.
Salomon Bros. & Co., Cameronia, Glasgow, 96 bls. rags.
Salomon Bros. & Co., Chickahoming, Glasgow, 189 bls. flax waste.

OLD ROPE

E. J. Keller Co., Inc., Francisco, Newcastle, 226 coils.
Brown Bros. & Co., Editor, Rotterdam, 53 coils.
Brown Bros. & Co., Stavangerfjord, Kristiania, 69 coils.
Brown Bros. & Co., London Commerce, London, 97 coils.
Brown Bros. & Co., Waukegan, Rotterdam, 64 coils.
Brown Bros. & Co., Rotterdam, Rotterdam, 45 coils.
W. Schall & Co., Hektor, Barcelona, 70 coils.

WOOD PULP

The Barregaard Co., Stavangerfjord, Sarpsborg, 360 bls. dry unbleached Sulphite.
M. Gottesman & Co., Inc., Orbita, Hamburg, 1,050 bls. sulphite.
Castle & Overton, by same, 1,175 bls. sulphite.
Castle & Overton, Pres. Harding, Bremen, 1,600 bls. wood pulp, 320 tons.
H. Hollesen, by same, 804 bls. wood pulp, 160 tons.
Buck, Kiaer & Co., Inc., Kungsholm, Gothenburg, 250 bls. wood pulp.
M. Gottesman & Co., Inc., Trolleholm, Halmstad, 6,400 bls. wood pulp.
Tidewater Papermills Co., Bornholm, Liverpool, 12,653 bls. wood pulp.
The Barregaard Co., Dania, Hurum, 180 bls. wood pulp.
E. M. Seigant Co., by same, 1,215 bls. wood-pulp.

WOOD FLOUR

B. L. Soberaki, Stavangerfjord, Kristiania, 1,500 bgs.
A. Kramer & Co., Inc., Orbita, Hamburg, 493 bgs.
The Hansa Co., Homer City, Hamburg, 238 bgs.

CASEIN

T. M. Duche & Sons, Vennsia, London, 400 bags.
Brown Bros. & Co., Pres. Van Buren, London, 700 bags.
J. A. & W. Bird & Co., Cubano, B. Aires, 334 bags.
Equitable Trust Co., C. Planter, Auckland, 667 bags.
Equitable Trust Co., C. Planter, Wellington, 350 bags.

CHINA CLAY

Moore & Munger, Ainess, Fowey, 2,766 tons, 16 cwt.
English China Clays Sales Corp., by same, 1,938 tons, 7 cwt.

PHILADELPHIA IMPORTS

WEEK ENDING MAY 5, 1923

Paper House of Penn., Westerner, Antwerp, 849 rolls news print.
Paper House of Penn., by same, 862 bls. news print.
H. Reeve, Angel & Co., by same, 306 bls. news print.

(Continued on page 68)

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New York Market Review

OFFICE OF THE PAPER TRADE JOURNAL,
WEDNESDAY, May 9, 1923.

Firm prices, a steady demand and a rapid improvement in the various adverse conditions from which industry in general may have been suffering have tended to keep paper in good demand during the week. Paper men are prophesying that when the books are closed out for this year the profit side of the ledger will show more than it has for any twelvemonth since those dimly remembered times of the war boom.

There is reason to believe that this year will be only the starting point and that the paper industry may be starting on a period of unprecedented prosperity. Some of the Cassandras of the trade are pointing out that most of the buying is being done for immediate demands and that the mills are selling to customers who are not storing. They contend that the instant anything happens that causes them to begin storing the market will run decidedly into the doldrums.

Taking a long view of the market, based upon its behavior during the past few weeks, it would seem that even if the pessimists were right nothing but some catastrophe could stand in the way of the prosperous era. A year or two ago there was a great deal of talk about "readjustments following the war" and many of those who were pinched between a slow demand and rising production costs were praying that the "readjustments" would come to an end and the fat times arrive. They have arrived creeping upon the industry unaware and they are here to stay. There is only one thing that might be big enough to scare them away again and that is price inflation.

In discussing the various fields of the market individually one naturally thinks first of pulp, which is just recovering from the effects of a labor struggle in Scandinavia. The American manufacturers who used imported pulp were in great distress and their frantic efforts to keep up with their orders when they were starved for proper raw material were a disturbing factor throughout the whole paper market. This strain has now passed and both mechanical and chemical pulps in all grades have steadied down, although the demand is still heavy.

Fine papers went along at the same steady pace at which they have been moving for the past month. There was a good demand for futures, but trading in the open market was light, which is generally true of the high grades. Mills are running up to capacity and disposing of their entire production on contract.

News print also continued about the same as it has been. Manufacturers are getting ready for the usual slack summer period that comes in hot weather both to news print mills and to newspaper offices. Advertising falls off and news becomes scarcer and papers become smaller. There is no indication that there will be any great change in news print prices either up or down for some time to come.

The various grades of book paper are all selling well. Representatives here of both Canadian and domestic mills report that they are having little difficulty in disposing of their wares and say they do not anticipate any change for several weeks at least.

Brisker buying in all grades of tissue was noticeable during the week. There was more trading in the open market and contracts were coming along with more frequency. Jobbers say that they expect still further increases in their business during the next month.

Kraft, jute, fiber and manila papers are all in fair demand for future use, but spot goods are moving with less rapidity. Buyers seem to have fairly good stocks on hand for present use but there is no sign of any diminishing of prices nor is there any tendency on the part of manufacturers to increase them. Production costs remain the same and it is unlikely that there will be any change.

Chip and news board are in steady demand with prices firm. Other grades seem to be following these two along. Board dealers

and manufacturers have been making a concerted effort to stabilize prices in this field and they have apparently been successful. Methods of doing business which have too often been indulged in by certain manufacturers are being frowned upon by the others and there is every indication that board is going to remain at about the same level for longer than it has for several months.

Mechanical Pulp

Ground wood is in good demand with the news print mills coming in regularly for good contract orders. There is still brisk bidding in the open market, but dealers are keeping the price about the same to prevent any possibility of inflation. It is probable that the impulse given to mechanical pulp during the spring will carry it safely over the dull summer season without any radical changes. This will be particularly true if the season is dry, causing low water and a consequent smaller supply.

Chemical Pulp

Although the stabilization of chemical pulp is not yet completed it has progressed far enough so that both buyers and sellers can breathe freely once more. Jobbers and manufacturers are keeping the price at an even level in order to prevent any return of the panicky condition of a month ago.

Waste Paper

The better grades of waste paper are in good demand, with shavings leading the market. There has been a slight falling off in the lower grades but not enough to cause dealers any alarm. The good demand for board has kept the mills in the market to a greater extent than is usual at this time of year and no change is expected within the next week.

Rags

Domestic and imported rags remained the same during the week except in roofing stock where the demand was not quite so great. Importations were not quite so heavy, although this was not due to any slackness of buying. The better grades were more called for than the lower and prices were firm all the way around.

Old Rope and Bagging

Rope was in slightly better demand than bagging during the week, although paper manufacturers did not appear overanxious for either commodity. There was no change either for better or for worse during the week.

Twine

Prices on twine remained on an even keel and the demand is steady, but not heavy. The expected rise in prices did not come, but dealers say that there may be slight upward changes almost any time.

J. W. Sewall Completes Big Timber Cruise

[FROM OUR REGULAR CORRESPONDENT.]

OLD TOWN, Me., May 7, 1923.—The James W. Sewall timber cruising organization is completing the final office work on a detailed cruise and estimate of some 1,000,000 acres of land belonging to McLachlin Brothers, Ltd., of Arnprior, Ont.

The work has taken upwards of 2 years, and has been very thorough and complete. All boundary lines of the various properties have been re-surveyed, and new interior lines for purposes of mapping control run parallel with each other at 2-mile intervals. Cruisers have gridironed the property between these control lines, travelling at close intervals, mapping the country and estimating the timber.

The results of the survey and exploration have been systematically set forth on standardized sheets and maps, filed with the owners at Arnprior. The system is so thorough that any location on which information is wanted, may be turned to in two minutes, and the maps thereof, as well as the estimates of timber and local report, be on the executor's desk immediately.

Imports and Exports of Paper and Paper Stock

(Continued from page 64)

H. Reeve, Angel & Co., by same, 948 rolls news print.

Johnston Paper Co., by same, 75 rolls news print.

Castle & Overton, Pres. Fillmore, Bremen, 550 bls. wood pulp.

Castle & Overton, Porta, Bremen, 415 bls. wood pulp.

Castle & Overton, Breedyk, Rotterdam, 1,875 bls. wood pulp.

Kelly & Co., Westerner, Antwerp, 116 bls. rags.

E. J. Keller Co., Inc., by same, 1,471 bls. rags.

E. J. Keller Co., Inc., by same, 50 bls. bagging.

American Woodpulp Corp., by same, 719 bls. rags.

Waste Material Trading Corp., by same, 433 bls. rags.

Castle & Overton, by same, 103 bls. rags.

Union National Bank, by same, 270 bls. rags.

Waste Material Trading Corp., Elmsport, Rotterdam, 115 bls. rags.

Waste Material Trading Corp., Elmsport, Rotterdam, 117 bls. shoppies.

D. J. Murphy, by same, 80 bls. bagging.

D. J. Murphy, by same, 520 bls. rags.

Katzenstein & Keene, Inc., by same, 48 bls. rags.

E. J. Keller Co., Inc., by same, 87 bls. rags.

S. Birkenstein & Sons, by same, 205 bls. rags.

Castle & Overton, by same, 1,512 bls. rags.

Castle & Overton, S. W. Miller, London, 71 bls. rags.

Castle & Overton, Breiz Izel, Havre, 918 bls. rags.

Castle & Overton, Teresa, Trieste, 520 bls. rags.

Katzenstein & Keene, Inc., Breiz Izel, Havre, 162 bls. rags.

Katzenstein & Keene, Inc., M. Exchange, London, 98 bls. new cuttings.

Katzenstein & Keene, Inc., M. Mariner, London, 49 bls. new cuttings.

Katzenstein & Keene, Inc., Quaker City, Leith, 116 bls. bagging.

E. J. Keller Co., Inc., Malgache, Conio, 245 bls. rags.

E. J. Keller Co., Inc., Teresa, Trieste, 2,457 bls. rags.

D. M. Hicks, Westerner, Antwerp, 10 rolls old rope.

D. M. Hicks, by same, 34 bls. old rope.

BALTIMORE IMPORTS

WEEK ENDING MAY 5, 1923

M. Gottesman & Co., Inc., Puget Sound, Gothenburg, 1,250 bls. wood pulp.

BOSTON IMPORTS

WEEK ENDING MAY 5, 1923

J. A. & W. Bird & Co., Bonheur, B. Aires, 417 bgs. cascin.

Atterbury Bros. Inc., by same, 910 bgs. cascin.

E. J. Keller Co., Inc., Jethon, Hamburg, 74 bls. rags.

Katzenstein & Keene, Inc., Darian, London, 39 bls. new cuttings.

NEW ORLEANS IMPORTS

WEEK ENDING MAY 5, 1923

Castle & Overton, Montana, Havre, 787 bls. rags.

Castle & Overton, by same, 62 bls. bagging.

PAPER MEN URGE PURCHASE OF FOREST LANDS

[FROM OUR REGULAR CORRESPONDENT.]

WASHINGTON, D. C., May 9.—A committee representing paper manufacturers, newspaper publishers, lumber manufacturers and other wood using industries had a conference at the White House with the President on May 2 in connection with desired appropriation to purchase forest lands under the Weeks law.

During the past few years Congress has appropriated only \$450,000 for the purchase of these lands and the committee asked that the President recommend an appropriation of \$2,000,000 in the next budget. This was the sum appropriated by Congress each year prior to the war.

E. H. Baker of the *Cleveland Plain Dealer* and chairman of the Forestry Committee of the American Newspaper Publishers' Association, made the principal presentation, while R. S. Kellogg, chairman of the National Forestry Program Committee, also addressed the President. It is understood that the President, in responding, was favorably disposed to the recommendation, but he made no definite promises. He called the committee's attention to the fact, however, that the government at the present time is making every effort to reduce the budget.

Mr. Baker told the President that the committee recommended \$2,000,000 as an annual appropriation, which is the amount recommended for the forthcoming year by the National Forest Reservation Commission. "Congress, we believe," said Mr. Baker, "is willing to sanction this action if the executive branch of the government will make the necessary recommendations through the budget commissioner. In our judgment, delay is dangerous. It is already the eleventh hour; we respectfully urge your interest and help in this matter that concerns so intimately the supply of houses, furniture, paper and tools to the dense population of our Eastern States." Mr. Baker called the President's attention to the original passage of the Weeks law and to the appointment of the National Forest Reservation Commission, including, as it does, three members of the Cabinet, two Senators and two members of the House. He said that more than 2,000,000 acres had been acquired in 11 States since the passage of the act at an average of \$5.06 an acre. He also called attention to the fact that prices for this land are constantly rising and he said that the commission is now paying for cut-over land what twenty years ago when the purchases were first proposed could have been purchased at much cheaper prices.

Mr. Kellogg of New York Speaks

Mr. Kellogg in his remarks called attention to the fact that the

encouragement of forestry in some form has been a Federal and State policy for nearly fifty years. He said that the essentials in any adequate plan for the maintenance of our timber supply include, first, effective fire protection on both public and private forest land; second, scientific utilization of forest products; third, forest planting upon large areas of denuded lands, and, fourth, a substantial proportion of well distributed land in public ownership, upon which there may be grown the older classes and larger sizes of timber which, because of the time element involved, cannot be expected from private initiative. He said that a good start has already been made in these directions and he congratulated the present administration upon the effective support already given to them.

Mr. Kellogg called attention to the fact that now 70 per cent of the total forest area in the Rocky Mountain and Pacific Coast regions is in some form of public ownership, chiefly Federal, while east of the Rocky Mountains only three per cent of the total forest area is in public ownership and the States have done much more than the national Government.

Among those attending the conference, in addition to Mr. Baker and Mr. Kellogg were: Henry S. Graves, former chief forester of the United States; Dr. Wilson Compton, secretary of the National Lumber Manufacturers' Association; W. A. Babbitt, representing the wood-using industries; Milton E. Marcuse, of Richmond, Va., representing the American Paper and Pulp Association, and a number of other representatives of industries interested in forestry. The committee was accompanied to the White House by Senator Lodge of Massachusetts.

Maine Superintendents to Meet May 23

[FROM OUR REGULAR CORRESPONDENT.]

BANGOR, Me., May 7, 1923.—The next meeting of the Northeastern Division of the Superintendents' Association will be held in Bangor on May 23, and in view of the success of the last meeting of this division, held at Lincoln, N. H., it is confidently expected that the coming session will be a record-breaker. The program and entertainment committee is composed of H. H. Hackett, W. D. Somerville, C. A. Brautlecht and J. A. Harlow. Benjamin T. Larabee of the S. D. Warren Company, Cumberland Mills, Me., is secretary-treasurer of the division. B. M. Petrie is chairman.

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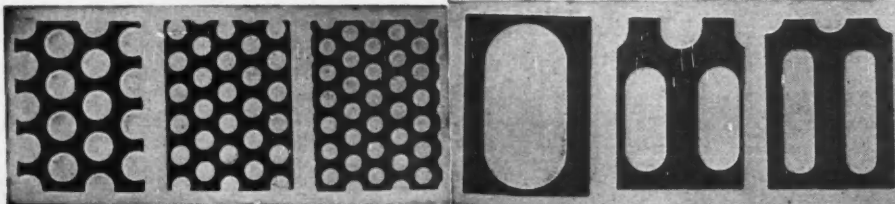
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