PUBLIC DOCUMENTS OF MAINE:

1907

BEING THE

ANNUAL REPORTS

OF THE VARIOUS

Departments and Institutions

FOR THE YEAR 1906.

VOLUME II.

AUGUSTA
KENNEBEC JOURNAL PRINT
1907

TWENTIETH ANNUAL REPORT

OF THE

BUREAU

OF

INDUSTRIAL AND LABOR STATISTICS

FOR THE

STATE OF MAINE

1906

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STATE OF MAINE.

OFFICE OF COMMISSIONER OF
INDUSTRIAL AND LABOR STATISTICS,
AUGUSTA, December 31, 1906.

To His Excellency, William T. Cobb, Governor of Maine:

SIR: I have the honor to present the report of the Bureau of Industrial and Labor Statistics for 1906.

Very respectfully,

SAMUEL W. MATTHEWS,
Commissioner.

INTRODUCTION.

The twentieth annual report of the Bureau of Labor includes the investigations made during the year 1906. The field of labor is a broad one. To obtain full " statistical details relating to all departments of labor in the State," requires much larger means and more extensive machinery than are provided for the use of the Bureau. Believing that the most important object of this Bureau is to ascertain the conditions of the wage-workers the Commissioner has continued his work of investigating the Trade Unions, obtaining from them information on many subjects of public interest and concern. It is gratifying to know that the work heretofore done in this line has met with appreciation and general satisfaction on the part of leading members of labor organizations, who have universally urged a continuance of this branch of work. The general information resulting from this investigation may be briefly summarized as follows: Number of local organizations in 54 cities, towns and plantations, 215, varying from 1 to 31 unions in a town. Fourteen unions known to exist have failed to report, and 5 others which have sent in returns, failed to report their membership. This leaves 196 unions reporting membership amounting to 14,772. Last year we found 212 unions in the State of which number 194 reported a membership of 13,798. This shows a gain of 3 unions and a gain in indicated membership of 974. Twenty-seven new unions not shown last year have sent in returns and 24 are reported disbanded within the year.

The relations of labor and capital have generally been amicable and satisfactory. The few labor difficulties which are reported have been of brief duration and have been adjusted without serious effect in the field of industry and enterprise. The apprentice " system " has received attention and it is found that but little in the way of practical results has been accomplished.

Among the more important industries of the State is that of the manufacture of pulp and paper. This industry has had a marked growth within the past few years until it has attained the leading place in the list of manufacturing industries in the State. In connection with this report we publish an interesting paper entitled "History of Papermaking in Maine, and the Future of the Industry," by Hugh J. Chisholm, president of the International Paper Company, and another valuable paper on the "Process of Manufacturing Chemical Pulp and Paper," by Daniel McMaster, general manager of the Oxford Paper Company of Rumford Falls.

The number of new factories, mills and shops enlarged, completed, or in process of erection in 1906, as reported by the assessors of cities, towns and plantations, is 132, costing $2,937,500, and furnishing employment to 3,724 additional hands.

A compilation of the manufacturing industries of Maine from the Census bulletin of 1905, is published in this report and will be found convenient as a means of reference and for obtaining valuable information.

An extended description of Maine's new seaport at Stockton Springs, developed through the extension of the Bangor and Aroostook Railroad, is herein given and will prove of great interest and value.

Other features of the report are a brief article on the manufacture of paper boxes, a description of the silk manufactory in Westbrook, the only enterprise of the kind in Maine, and an article on the railroads of Maine.

The report of the Inspector of Workshops, Mines and Quarries is herein published, in accordance with the provisions of the law.

The commissioner reiterates his expressions of obligation to his efficient clerk, Major Charles J. House, and to the special agents employed by him for a portion of the summer season, Francis Wiggin of Portland, and Roscoe A. Eddy of Bar Harbor.

FACTORIES, MILLS AND SHOPS BUILT DURING 1906.

In response to the following inquiries: "How many and what kinds of factories, mills and shops for manufacturing purposes, have been enlarged, completed, or are in process of erection during 1906?" "Estimated cost of same?" "Probable number of hands they will employ?" answers have been returned by the officers of nearly every city, town and plantation in the State. One hundred and five cities, towns and plantations report building in this line as follows:

ANDROSCOGGIN COUNTY.

Towns.	Buildings.	What done.	Cost.	Help.
East Livermore	Pulp mill	Built new	$300,000	50
Greene	Saw mill	Enlarged	500	5
Lewiston	Gas light plant	Enlarged	5,000	-
Lewiston	Two woolen mills	Enlarged	30,000	-
Lisbon	Woolen mill	Enlarged	40,000	20
Turner	Chair factory	Built new	2,000	10

AROOSTOOK COUNTY.

Bridgewater	Starch factory	Built new	5,000	15
Crystal	Saw mill	Built new	2,000	10
Eagle Lake Pl	Lumber mill	Rebuilt	75,000	125
Eagle Lake Pl	Shingle mill	Built new		
Fort Fairfield	Saw and shingle mill	Built new	20,000	75
Haynesville	Saw mill	Enlarged	3,000	10
Haynesville	Lath mill	Built new	1,000	5
Haynesville	Carriage and blacksmith shop	Enlarged	1,500	3
Hersey	Saw mill	Built new	2,000	8
Hill Pl	Lumber mill	Built new	35,000	40
Hill Pl	Hardwood mill	Building	25,000	100
Houlton	Starch factory	Built new	9,000	8
Linneus	Saw mill	Built new	2,500	6
Madawaska	Starch factory	Built new	5,000	10
Presque Isle	Moulding mill	Built new	1,200	3
Wallagrass Pl	Blacksmith shop	Built new	500	4

CUMBERLAND COUNTY.

Gorham	Corn canning factory	Built new	6,000	100
New Gloucester	Portable saw mill	Built new	700	8
Raymond	Ax handle factory	Built new	300	2
Westbrook	Warp mill	Enlarged	10,000	-
Westbrook	Paper mill	Enlarged	50,000	12
Windham	Pulp mill	Enlarged	150,000	125
Windham	Dynamite pulp flour mill	Built new		

FRANKLIN COUNTY.

Towns.	Buildings.	What done.	Cost.	Help.
Carthage	Portable saw mill	Built new	$1,500	9
Chesterville	Apple barrel factory	Built new	1,000	4
Madrid	Steam lumber mill	Built new	5,000	10
Salem	Skewer factory	Newmachin'y	700	4
Salem	Parcel handle factory	Newmachin'y	400	5

HANCOCK COUNTY.

Brooksville	Saw mill	Built new	2,000	10
Southwest Harbor	Glue factory	Built new	5,000	8

KENNEBEC COUNTY.

Clinton	Wood novelty shop	Built new	800	4
Clinton	Tannery	Enlarged	10,000	10
Gardiner	Shoe factory	Enlarged	20,000	350
Hallowell	Stone cutting plant	Built new	75,000	250
Manchester	Stone working shops	Built new	3,000	70
Rome	Two saw mills	Built new	1,800	16
Unity Pl.	Corn canning factory	Built new	500	15
Vassalboro	Woolen mill	Enlarged	10,000	-
Waterville	Shirt factory	Enlarged	5,000	20
Waterville	Machine shops	Enlarged	20,000	50
Waterville	Log hauler man'f	Enlarged	2,000	5
Winslow	Pulp mill	Enlarged	100,000	40
Winthrop	Woolen mill	Rebuilt	30,000	200

KNOX COUNTY.

Camden	Anchor works	Enlarged	23,000	75
Rockport	Shirt factory		-	25
Saint George	Clam canning factory	Built new	500	10
Warren	Saw mill	Enlarged	500	4

LINCOLN COUNTY.

Boothbay	Machine shop	Added	2,000	6
Nobleboro	Lumber mill	Built new	1,500	35
Nobleboro	Leather board mill	Built new	10,000	75
Somerville	Lumber mill	Built new	3,500	10
Wiscasset	Grist mill	Built new	4,000	3
Wiscasset	Creamery	Built new	2,000	3

OXFORD COUNTY.

Canton	Lumber mill	Built new	4,000	25
Gilead	Spool and bobbin mill	Built new	2,000	20
Paris	Two novelty mills	Enlarged	50,000	100
Peru	Saw mill	Built new	800	2
Stoneham	Saw mill	Built new	1,000	15
Upton	Dowel mill	Enlarged	500	10

PENOBSCOT COUNTY.

Towns.	Buildings.	What done.	Cost.	Help.
Brewer	Pulp mill	Enlarged	$25,000	70
Carmel	Apple barrel factory	Built new	200	1
Carroll	Lumber mill	Built new	2,000	4
Chester	Lumber mill	Built new	4,000	30
Clifton	Lumber mill	Enlarged	1,500	20
Clifton	Lumber mill	Built new	3,000	
Dexter	Machine shop	Built new	5,000	25
Dixmont	Lumber mill	Built new	2,500	15
Eddington	Saw mill	Enlarged	400	6
Hampden	Paddle and oar shop	Repaired	1,000	3
Howland	Saw mill	Built new	2,500	25
Levant	Two lumber and grist mills	Repaired	1,100	10
Lincoln	Lumber mill	Built new	5,000	25
Milford	Electric power plant	Built new	800,000	-
Newburg	Saw mill	Enlarged	400	10
Newport	Wood novelty mill	Remodeled	75,000	25
Newport	Wood working mill	Built new		15
Patten	Wood working mill	Built new	2,000	4
Plymouth	Lumber mill	Built new	1,500	4
Town. A, R. 7, W. E. L. S.	Pulp and paper mills	Built new	500,000	275
Webster Pl	Lath mill	Built new	2,000	12

PISCATAQUIS COUNTY.

Brownville	Lumber mill	Built new	20,000	80
Greenville	Veneer and box mill	Built new	40,000	25
Medford	Lumber mill	Built new	3,000	6
Milo	Electric light station	Built new	3,000	2
Milo	Lumber mill	Built new	25,000	100
Monson	Slate mill	Built new	3,000	17
Wellington	Saw mill	Built new	500	3

SAGADAHOC COUNTY.

Arrowsic	Saw mill	Built new	1,000	6

SOMERSET COUNTY.

Anson	Lumber mill	Built new	15,000	65
Athens	Wood working mill	Built new	1,500	3
Canaan	Grist mill	Built new	1,000	1
Concord	Bobbin mill	New machin'y	1,000	-
Jackman Pl	Saw mill	Built new	2,000	10
New Portland	Electrical power plant	Built new	8,000	10
New Portland	Saw mill	Enlarged	2,500	
Skowhegan	Pulp mill	Enlarged	25,000	-
Smithfield	Lumber mill	Built new	1,200	2
Smithfield	Shingle mill	New machin'y	1,200	1

WALDO COUNTY.

Lincolnville	Saw mill	Built new	2,100	4
Northport	Saw mill	Built new	500	8
Searsmont	Saw mill	Built new	800	2
Troy	Saw mill	Built new	500	6

WASHINGTON COUNTY.

Towns.	Buildings.	What done.	Cost.	Help.
Charlotte	Lath mill	Built new	$2,500	5
Charlotte	Lumber mill	Built new	3,000	6
Columbia Falls	Blueberry canning factory	Built new	1,500	14
Cutler	Blueberry canning factory	New machin'y	1,000	5
Deblois	Lumber mill	Enlarged	300	4
Harrington	Lath and shingle mill	Built new	1,200	10
Jonesboro	Two lumber mills	Enlarged	4,300	35
Machias	Wooden box mill	Built new	6,000	20
Machias	Granite working shop	Built new	400	10
Perry	Lumber mill	Built new	15,000	25
Robbinston	Lath mill	Built new	1,000	6
Trescott	Two saw mills	Built new	1,500	10
Wesley	Wood novelty mill	Enlarged	1,000	10

YORK COUNTY.

Limerick	Marble shop	Built new	700	2
Parsonsfield	Woolen mill	Enlarged	25,000	80
Saco	Shook mill	Additions	1,000	-
Sanford	Worsted mill	Enlarged	20,000	300
Sanford	Shoe factory	Built new	25,000	

RECAPITULATION.

Counties.	Number of towns.	Number of buildings.	Total cost.	Hands employed.
Androscoggin	5	7	$377,500	85
Aroostook	12	16	187,700	422
Cumberland	5	7	271,000	247
Franklin	4	5	8,600	32
Hancock	2	2	7,000	18
Kennebec	10	14	278,100	1,030
Knox	4	4	24,000	114
Lincoln	4	6	23,000	132
Oxford	6	7	58,300	172
Penobscot	19	22	1,434,100	579
Piscataquis	6	7	94,500	233
Sagadahoc	1	1	1,000	6
Somerset	8	10	58,400	92
Waldo	4	4	3,900	20
Washington	11	15	38,700	160
York	4	5	71,700	382
Total	105	132	$2,937,500	3,724

TOTALS FOR SIXTEEN YEARS.

Years.	Number of towns.	Number of buildings.	Total cost.	Hands employed.
1891	86	110	$3,023,850	4,278
1892	89	114	2,128,000	4,319
1893	81	108	841,725	2,522
1894	48	55	663,700	1,036
1895	75	102	1,367,800	2,797
1896	62	77	1,055,900	1,470
1897	74	95	827,600	2,339
1898	64	72	675,100	2,024
1899	103	138	6,800,700	4,990
1900	114	167	2,174,825	5,539
1901	94	121	5,638,200	6,337
1902	91	129	2,776,930	5,017
1903	96	124	1,436,900	3,343
1904	91	113	1,175,500	3,276
1905	93	114	2,303,410	3,329
1906	105	132	2,937,500	3,724

LABOR UNIONS.

In gathering statistics of labor unions the present year we have worked along the same lines as in 1905. The matter of securing returns from the several unions throughout the State has been in the hands of the same man we employed as special agent in this work last year, Mr. Roscoe A. Eddy, of Bar Harbor. In sending in the results of his season's work Mr. Eddy writes as follows:

"The great majority of the union men are very anxious to have a full and reliable report because they understand that it is of great value to them. It is about the only way possible for them to find out anything about the trade conditions, strikes and lockouts, and many matters that directly affect themselves in other parts of the State.

"The leading labor men all say that the report last year was very accurate, and of great value, particularly to the secretaries of the different unions who use the directory given in the report and, as there is a large amount of correspondence between the many unions of the State, this feature of the report has stimulated the earnest and wise union men to render much valuable assistance in getting returns promptly filled. In order to get the best results we must have returns from all the unions in the State, and we are glad to say that there are but few unions from which we have not heard. It would be impossible for me to make a personal call on the secretaries of all unions, scattered as they are among the islands, the remote places, and the large cities of Maine, and we should be obliged to go without returns from unions who do not answer by mail if it were not for the union men who are in the organizations for no other purpose than to improve the trade conditions. In the latter class are the officers of the State Federation of Labor, and many others who have so kindly assisted in the work, all of whom I wish most heartily to thank.

"There is a small number who are members of a union and at the same time are not union men. Such members always annoy the union and they are common in localities where unions are poor. We shall assume that this class of members is being eliminated by the sincere union men, as we find a marked gain in the unions of the past year in the localities where this element was found.

"There is still another class, the dilatory members. We are glad to state that there are not so very many of them. It is most important that the unions keep clear of this class for officers. It will be found that it is impossible to have a well conducted union with a dilatory member for secretary."

The blank used this year contained a communication from the labor commissioner, giving a quotation from the law, and briefly explaining the scope of the investigation, also a letter signed by the special agent, signifying what was expected of the secretaries of the different unions in furnishing the information desired, besides the following questions:

1. Name of town or city.....
2. How many labor unions in your town or city?.....
3. Name of your union.....
4. Name of your secretary.....
5. Address of secretary.....
6. Date of organization.....
7. Has your union a trade agreement with employers?..... When does it expire?.....
8. Number of members of your union.....
9. Qualifications for membership.....
10. Initiation fee.....Monthly dues.....
11. Times of meeting.....
12. Benefits, insurance, etc.....
13. Number of hours of labor daily.....
14. Minimum daily wages.....
15. Average number of days lost per individual during the year ending June 30, 1906.....
16. Average number of days worked per individual during same year.....
17. Total average amount of wages per individual during same year.....
18. Do non-union men enjoy the same conditions as to hours of labor, wages and steady employment as union men?.....

19. What have you accomplished for labor by organization?

20. Has your union been involved in any labor agitation with employers during the year as to rates of wages, hours of labor, etc., not resulting in a strike or lockout?.....Nature of dispute and how settled.....

21. Has your union been involved in any strike or lockout during the year?.....If so, give history and results.....

22. Has your union an apprentice system?.....Please explain the system in full.

The only variation in the blanks used the present year from those of 1905 is the addition of question numbered 22, relating to the apprentice system. Question 2 was inserted to furnish information to the special agent, as to the number of unions in a town, while he was pursuing his work. With that exception we give in detail, arranged alphabetically by towns, the substance of the answers to questions 1 to 14 inclusive, for each union reporting, under the title "Statistics of Labor Unions in Maine."

But few secretaries attempted to answer questions 15, 16 and 17. The estimate of lost time for all the members of a union is a most difficult thing to get at, and the answers are so meager that we deem it best to omit the matter altogether, as what we might get from the returns would be of very little value.

The information compiled from question 18 we have arranged by trades, under the title, "Discriminations against Non-union Men."

A condensation of the replies to question 19, in regard to what had been accomplished by organization, appears under the title "Results of Organization."

The information derived from questions 20 and 21 is given under the title "Requests, Differences and Strikes."

The information given in answer to question 22 has been compiled and is presented under the title "The Apprentice System."

We also present a complete list of State and local central labor organizations, giving location, name and address of president and secretary in each case.

STATE AND LOCAL CENTRAL LABOR ORGANIZATIONS.

At the present time there are two State and eleven local representative labor organizations in Maine, as follows:

State Organizations.

Maine State Federation of Labor. President, Eugene D. Brann, Ellsworth; Secretary, John F. Connelly, Box 140, Bangor.

Maine State Conference of Bricklayers and Masons' International Union. President. D. A. Mahoney, Portland; Secretary-treasurer, M. F. Pettingill, 10 Lowell street, Lewiston; time of meeting, second Monday in November.

Local Organizations.

Building Trades' Council, Bar Harbor. President, Roscoe A. Eddy, 5 Barron court, Bar Harbor; secretary, H. M. Clark, Bar Harbor.

Central Labor Union of Augusta, Hallowell and Gardiner. President, Patrick H. Fitzgerald, Augusta; secretary, Abner W. Nichols, Augusta.

Central Labor Union of Bangor and vicinity. President, A. P. Richardson, Box 411, Bangor; secretary, John F. Connelly, Box 140, Bangor.

Central Labor Union of Lewiston and Auburn. President, W. E. Pelsey, 198 Lisbon street, Lewiston; secretary, Alden M. Flagg, 94 Spring street, Auburn.

Central Labor Union of Madison. President, Daniel McDonald, Madison; secretary, Frank Flanders, Madison.

Central Labor Union of Millinocket. President, E. J. Graham, Millinocket; secretary, W. I. Boyer, Millinocket.

Central Labor Union of Portland. President, James J. Garrity, Everett street, Portland; secretary, Charles L. Fox, 10 Free street, Portland.

Central Labor Union of Rockland. President, S. Goldberg, 13 State street, Rockland; secretary, Arthur Bonnia, 9 Brick street, Rockland.

Central Labor Union of Skowhegan. President, W. A. Hapgood, Skowhegan; secretary, H. S. Rogers, Skowhegan.

Central Labor Union of Waterville. President, Henry Talberth, 39 Main street, Waterville; secretary, F. S. H. Callaghan, 54 Silver street, Waterville.

Central Labor Union of Biddeford. President, M. H. Whelan, Biddeford; secretary, John Darcy, Biddeford.

STATISTICS OF LABOR UNIONS IN MAINE.

Addison.

Lobster Fishermen's Union. Secretary, L. Roy Wass, Seaside; date of organization, October 19, 1905; number of members, 45; qualifications for membership, must be a lobster fisherman over eighteen years of age, a citizen of the United States and of good standing as an honest wage-earning man; initiation fee, 75 cents; monthly dues, 25 cents; times of meeting, weekly; benefits, local.

Ashland.

International Brotherhood of Maintenance of Way Employes, Ashland Lodge, No. 408. Secretary, A. B. Stone, Ashland; date of organization, December 15, 1903; has trade agreement with employers which expires June 1, 1907; number of members, 52; qualifications for membership, must be able bodied and temperate; initiation fee, $2.00; monthly dues, 10 cents; times of meeting, second Thursday in each month; has insurance benefit; hours of labor, 10.

Auburn.

Boot and Shoeworkers' Union, No. 45. Secretary, W. L. Dyer, 170 Seventh street, Auburn; date of organization, 1896; has no trade agreement with employers; number of members, 125; qualifications for membership, sound bodily health and good moral character; initiation fee, $1.00; weekly dues, 25 cents; times of meeting, weekly; sick benefit, $5.00 per week; death benefit, $50.00 after six months' membership, and $100 after two years' membership; hours of labor, 10, Saturdays, 9; minimum weekly wages, $7.68.

Boot and Shoeworkers' Union, No. 225. Secretary, W. E. Pelsey, 198 Lisbon street, Lewiston; date of organization, September 10, 1903; has no trade agreement with employers; number of members, 276; qualifications for membership, good health and actively engaged at the trade; initiation fee, $1.00; weekly dues, 25 cents; times of meeting, second and fourth Wednesdays in each month; strike benefit, $5.00 per week; sick benefit, $5.00 per week; death benefit, $100; hours of labor, 10.

Boot and Shoeworkers' Union, No. 416. Secretary, J. H. Pratt, R. F. D. No. 1, Lewiston; date of organization, Febru-

ary 11, 1905; has no trade agreement with employers; number of members, 80; qualifications for membership, must be a boot and shoeworker; initiation fee, $1.00; weekly dues, 25 cents; times of meeting, every Monday; sick benefit, $5.00 per week; death benefit, $50.00 after six months' membership and $100 after two years' membership; hours of labor, 10; minimum daily wages, $2.00.

Augusta.

Bricklayers, Masons and Plasterers' Union, No. 9. Secretary, Abner W. Nichols, Augusta; date of organization, September 7, 1899; has continuous trade agreement with employers, provided either party may give notice of termination three months prior to May 1 of each year; number of members, 50; qualifications for membership, must be a competent and practical workman; initiation fee, $11.00; monthly dues, 50 cents; times of meeting, every Friday evening; death benefit, assessment of $1.00 per member; hours of labor, 8; minimum daily wages, $3.00 from recognized bosses, and $3.60 from all others.

Brotherhood of Painters, Decorators and Paperhangers of America, No. 554. Secretary, F. W. Halpen, Augusta; date of organization, 1898; has trade agreement with employers which expires April 1, 1907; number of members, 21; qualifications for membership, three years' apprenticeship; initiation fee, $3.00; monthly dues, 50 cents; times of meeting, first and third Tuesdays in each month; death benefit, $150 after two years' membership; hours of labor, 8; minimum daily wages, $2.25.

Cotton Mule Spinners' Association, Union No. 10. Secretary, Rudolph Chenever, Box 237, Augusta; date of organization, July, 1889; has trade agreement with employers; number of members, 40; qualifications for membership, must be a mule spinner; no initiation fee; monthly dues, 50 cents; times of meeting, every other Saturday evening; hours of labor, 10; minimum daily wages, $2.00.

Federal Labor Union, No. 11,434. Secretary, William H. Davis, 96 Stone street, Augusta; has no trade agreement with employers; number of members, none reported; initiation fee, $1.50; monthly dues, 35 cents; times of meeting, second and

fourth Thursdays in each month; no benefits; no fixed hours of labor nor minimum wages.

International Brotherhood of Papermakers, Dirigo Lodge, No. 89. Secretary, Morris B. Roderick, 18 Spruce street, Augusta; date of organization, September 14, 1902; has no trade agreement with employers; number of members, 30; initiation fee, $1.50; monthly dues, 85 cents and 55 cents; times of meeting, twice a month; no benefits; hours of labor vary on different work, 9, 10 and 11; minimum daily wages vary on different work, $1.50, $1.75, $2.00, $2.50 and $3.00.

International Typographical Union, No. 380. Secretary, Leonard V. Clark, 23 Melville street, Augusta; date of organization, September 27, 1902; has no trade agreement with employers; number of members, 22; qualifications for membership, four years' apprenticeship; initiation fee, $2.00; monthly dues, 50 cents; times of meeting, first Saturday in each month; death benefit, $60.00; hours of labor, 9; minimum daily wages, $2.00.

Journeymen Barbers' International Union, No. 493. Secretary, Harry C. Jones, 7 Melville street, Augusta; date of organization, February 6, 1903; has trade agreement with employers, indefinite as to time; number of members, 11; qualifications for membership, three years' apprenticeship; initiation fee, $2.00; monthly dues, 60 cents; times of meeting, first and third Thursdays in each month; sick and accident benefits, $5.00 per week; death benefit, $100; hours of labor, 12; minimum weekly wages, $9.00.

Loomfixers' Union, No. 330. Secretary, Charles H. Leighton, 130 Northern avenue, Augusta; date of organization, April 1, 1902; has no trade agreement with employers; number of members, 18; qualifications for membership, must be a competent loomfixer; initiation fee, $1.00; monthly dues, 52 cents; times of meeting, Thursday following pay day; accident benefit, $3.00 per week; hours of labor, 10; minimum daily wages, $1.95 and $2.00, according to class of work.

Pulp, Sulphite and Papermill Workers' Union, No 35. Secretary, Rufus F. Pierce, 2 Court avenue, Augusta; date of organization, March 23, 1903; has no trade agreement with employers; number of members, 10; qualifications for membership, must be a competent workman; initiation fee, $1.00;

monthly dues, 35 cents; times of meeting, Sunday at 3 P. M. once a month; no benefits; hours of labor vary on different work, 9, 10, 11, 12 and 13; minimum daily wages, men, $1.50 to $3.00; women, $1.00.

Retail Clerks' International Protective Association, No. 819. Secretary, H. Leslie Haskell, 8 Maple street, Augusta; date of organization, March 22, 1903; has trade agreement with employers which expires May, 1907; number of members, 30; qualifications for membership, must be from eighteen to fifty years of age and actually engaged in retail trade other than liquor traffic; monthly dues, 25 cents; times of meeting, weekly; sick benefit, $5.00 per week; death benefit, $25.00 after six months' membership, $50.00 after one year's membership, $100 after two years' membership, and $200 after three years' membership; hours of labor, close at 9 P. M. Saturdays and 6.30 P. M. other days; no fixed minimum wages.

Ring Spinners' Union. Secretary, Lizzie Cyr, Augusta; date of organization, August 8, 1906; number of members, 92; qualifications for membership, must be a competent ring spinner; no initiation fee; monthly dues, 50 cents; hours of labor, 10.

Suspender Workers' Union, No. 11,095. Secretary, Elden W. Hanks, 17 Crosby street, Augusta; date of organization, July, 1902; has trade agreement with employers which expires December 31, 1907; number of members, 8; qualifications for membership, must be under forty years of age; initiation fee, $2.00; monthly dues, 50 cents; times of meeting, second Tuesday in each month; no benefits; hours of labor, 8; minimum daily wages, $1.50.

United Brotherhood of Carpenters and Joiners of America, No. 914. Secretary, Ira H. Foster, 10 Chapel street, Augusta; date of organization, October 2, 1901; has yearly agreement with employers; number of members, 120; qualifications for membership, must be a journeyman carpenter of good moral character and capable of commanding the average wage; initiation fee, $15.00; monthly dues, 50 cents; times of meeting, second and fourth Monday evenings in each month; disability benefit, $100 after one year's membership, $200 after two years' membership, $300 after three years' membership, and $400 after five years' membership; sick benefit, local; death benefit, $100 after six months' membership and $200 after one year's mem-

bership, on death of member; $25.00 after six months' membership and $50.00 after one year's membership, on death of wife; hours of labor, 8; minimum daily wages, $2.25.

Baileyville (Woodland).

International Brotherhood of Papermakers. Secretary, William Pratt, Woodland, Washington county; date of organization, October 8, 1906; has no trade agreement with employers; number of members, 35; qualifications for membership, one year's work as third hand on paper machine; initiation fee, $3.00; monthly dues, 75 cents; times of meeting, first and third Sundays in each month; hours of labor, 8; minimum daily wages, $1.90.

Bangor.

Atlantic Coast Seamen's Union, Bangor Branch. Secretary, William H. Frazier, 1½ Lewis street, Boston, Mass.; the rooms here are closed during the winter season; date of organization, November 6, 1889; number of members, 3,500 on the whole Atlantic seaboard but impossible to segregate those sailing out of Maine ports; qualifications for membership, must be an efficient seaman; initiation fee, $5.00; monthly dues, 70 cents; times of meeting, every week in all ports; shipwreck benefit, $20.00; accident benefit, $200; death benefit, $50.00; hours of labor, not limited; minimum daily wages, $1.00 and board.

Bricklayers, Masons and Plasterers' Union, No. 7. Secretary, Walter C. Sturtevant, corner Jackson and Ohio streets, Bangor; date of organization, April 13, 1899; has no trade agreement with employers; number of members, 115; qualifications for membership, must be a good workman at one or more branches of the trade; initiation fee, $10.00; monthly dues, 50 cents; times of meeting, every Friday evening; death benefit, assessment of $1.00 per member, and assessment of 50 cents per member on death of wife; hours of labor, 8; minimum daily wages, $3.50.

Brotherhood of Locomotive Engineers, Ticonic Division, No. 508. Secretary, T. J. Ferry, 36 Walter street, Bangor; number of members, 105; qualifications for membership, good moral character and six months' experience as locomotive engineer; initiation fee, $10.00; times of meeting, second and fourth

Sundays in each month; sick benefit, $6.00 per week for not over ten weeks in any one year; insurance benefit, $1,500 to $4,500 according to age, which includes disability clause paying full amount of policy; hours of labor vary according to service, maximum, 11; minimum daily wages, $3.50 on road, $3.00 on switching service.

Brotherhood of Painters, Decorators and Paperhangers of America, No. 262. Secretary, G. L. Stackpole, Warren street, Bangor; date of organization, January, 1900; has no trade agreement with employers; number of members, 28; qualifications for membership, must be a competent workman; intiation fee, $5.00; monthly dues, 50 cents; times of meeting, every Wednesday; total disability benefit, $180; death benefit, $150 on death of member, and $50.00 on death of wife; hours of labor, 9; minimum daily wages, $2.25.

Brotherhood of Railroad Trainmen, No. 443. No return.

Building Laborers' Protective Union, No. 1. Secretary, Thomas McGoff, Frazier street, Bangor; date of organization, August 1, 1901; has no trade agreement with employers; number of members, 39; qualifications for membership, thorough knowledge of the work; initiation fee, $5.00; monthly dues, 25 cents; times of meeting, every Tuesday; accident benefit, $5.00 per week; death benefit, $50.00; hours of labor, 8; minimum daily wages, $2.10.

Cigarmakers' International Union of America, No. 179. Secretary, Adolph Scherer, 99 Birch street, Bangor; date of organization, October 13, 1884; has trade agreement with employers, indefinite as to time; number of members, 56; qualifications for membership, good moral character, and three years' apprenticeship; initiation fee, $3.00; weekly dues, 30 cents; times of meeting, first Monday in each month; sick benefit, $5.00 per week; out of work benefit, $3.00 per week; traveling benefit, to be paid on securing work; death benefit, from $50.00 to $550, according to number of years in the union; hours of labor, 8; no fixed minimum daily wages, all piece work.

Federal Labor Union, No. 9,646. Secretary, Michael Callan, 69 Second street, Bangor; date of organization, February 24, 1902; has no trade agreement with employers; number of members, 24; qualifications for membership, eighteen years of age and of good moral character; initiation fee, $2.00; monthly

dues, 25 cents; times of meeting, second and fourth Thursdays in each month; no benefits; hours of labor, 9; minimum daily wages, $1.75.

Foundry Workers' Union. No return.

International Brotherhood of Teamsters, No. 365. Secretary, Sherman G. Staples, 78 Walter street, Bangor; date of organization, 1902; has no trade agreement with employers; number of members, 21; initiation fee, $3.00; monthly dues, 50 cents; times of meeting, every Wednesday evening; no benefits; hours of labor and minimum daily wages not fixed.

International Longshoremen, Marine and Transportation Association, No. 515. Secretary, John H. Callan, 32 Pleasant street, Bangor; date of organization, July 13, 1903; has trade agreement with employers which expires annually at close of navigation; number of members, 125; qualifications for membership, one year's residence in the United States; initiation fee, $5.00; monthly dues, 50 cents; times of meeting, second and fourth Mondays in each month; no benefits; hours of labor, 10; minimum daily wages, $3.00.

International Typographical Union, No. 446. Secretary, Fred J. Foster, 318 Grove street, Bangor; date of organization, September 3, 1901; has trade agreement with employers which may be terminated on thirty days' notice by either party; number of members, 46; qualifications for membership, must be a competent workman after four years' apprenticeship; initiation fee, $1.00; monthly dues, 50 cents; times of meeting, first Saturday in each month at 5 P. M.; has strike and death benefits; hours of labor, 9 by day, 8 by night; minimum daily wages, men, day, $2.00, night, $2.50; women, $1.33.

Iron Moulders' Union of North America, No. 101. Secretary, Thomas J. O'Leary, 43 Patten street, Bangor; date of organization, reorganized in 1900; number of members, 49; qualifications for membership, must be a competent workman; initiation fee, $5.00; monthly dues, $1.00; times of meeting, first and third Wednesdays in each month; sick benefit, $5.00 per week for thirteen weeks; total disability benefit, $150; death benefit, $100, $150 or $200, according to length of time of membership in the union; hours of labor, 9; minimum daily wages, $2.75.

Journeymen Barbers' International Union of America, No. 211. No return.

Moccasin and Moccasin Slipper Workers' Union, No. 12,283. Secretary, Chester O. Perkins, 18 Division street, Bangor; date of organization, September, 1906; has no trade agreement with employers; number of members, 45; qualifications for membership, must be a competent workman at the trade; initiation fee, $5.00; monthly dues, 35 cents; times of meeting, every Saturday at 7.30 P. M.; hours of labor, 9; minimum daily wages, $1.80.

Order of Railroad Telegraphers, Old Town Division, No. 11. No return.

Order of Railway Conductors, Bangor Division, No. 403. No return.

United Association of Journeymen Plumbers, Gasfitters, Steamfitters and Steamfitters' Helpers of United States and Canada, No. 209. Secretary, J. L. Gleason, 395 Hancock street, Bangor; date of organization, July 14, 1900; has no trade agreement with employers; number of members, 11; initiation fee, $15.00; monthly dues, $1.50; times of meeting, every Tuesday; sick benefit, $5.00 per week; strike benefit, $5.00 per week; death benefit, $100; hours of labor, 9; minimum daily wages, $2.50.

United Brotherhood of Carpenters and Joiners of America, No. 621. Secretary, William L. Castellon, 16 Blake street, Brewer; date of organization, June, 1900; has no trade agreement with employers; number of members, 140; qualifications for membership, must be capable of earning average wages at the trade; initiation fee, $5.00; monthly dues, 50 cents; times of meeting, every week; hours of labor, 9.

Belfast.

Boot and Shoeworkers' Union, No. 362. Secretary, John S. Davidson, Box 34, Belfast; date of organization, February 3, 1903; has trade agreement with employers which expires February 1, 1907; number of members, 221; qualifications for membership, must be an active boot and shoeworker; initiation fee, $1.00; weekly dues, 25 cents; times of meeting, every Thursday evening; sick benefit, $5.00 per week for thirteen weeks; death benefit, $100 after two years' membership; hours of labor, 10; minimum daily wages, $1.00.

Biddeford.

Bricklayers, Masons and Plasterers' Union, No. 14. Secretary, Justice Cobb, 107 Temple street, Saco; date of organization, May 10, 1903; has trade agreement with employers which expires March 30, 1907; number of members, 42; qualifications for membership, three years' apprenticeship; initiation fee, $11.00; monthly dues, 50 cents; times of meeting, every Monday evening; no benefits; hours of labor, 8; minimum daily wages, $3.25.

Cigarmakers' International Union of America, No. 40. Secretary, Joseph F. Curtis, 15 Vetromile street, Biddeford; date of organization, 1889; has trade agreement with employers, indefinite as to time; number of members, 27; qualifications for membership, three years' apprenticeship; initiation fee, $3.00; monthly dues, $1.20; times of meeting, second Monday in each month; sick benefit, $5.00 per week; out of work benefit, $3.00 per week; death benefit, from $50.00 to $550; hours of labor, 8; minimum daily wages, $2.00.

International Brotherhood of Blacksmiths and Helpers. Secretary, Fortunat Paquin, 335 Main street, Biddeford; date of organization, December 4, 1905; has no trade agreement with employers; number of members, 15; initiation fee, $3.00; monthly dues, 50 cents; times of meeting, second and fourth Thursdays in each month; hours of labor, 10; minimum daily wages, $1.40.

Iron Moulders' Union of North America, No. 288. Secretary, C. E. Skilling, Box 599, Saco; date of organization, January 28, 1898; has trade agreement with employers which expires April 15, 1907; number of members, 103; qualifications for membership, four years' apprenticeship; initiation fee, $5.00; annual dues, $14.00; times of meeting, first and third Wednesdays in each month; sick benefit, $5.25 per week; hours of labor, 9; minimum daily wages, $2.50.

Retail Clerks' International Protective Association. Secretary, Jerry Mahoney, 18 Bradbury street, Biddeford; date of organization, May 31, 1906; has no trade agreement with employers; number of members, 54; qualifications for membership, all clerks of one year's service, except those in the liquor traffic; initiation fee, $1.00; monthly dues, 50 cents;

times of meeting, first and third Thursdays in each month; sick benefit, $5.00 per week; no fixed hours of labor nor minimum wages.

United Brotherhood of Carpenters and Joiners of America, No. 896. Secretary, Warner F. Smith, 166 Elm street, Biddeford; date of organization, June 21, 1905; has no trade agreement with employers; number of members, 52; qualifications for membership, for beneficiary members, good moral character, from twenty-one to fifty years of age, and competent to command the standard wage; initiation fee, $5.00; monthly dues, 50 cents; times of meeting, every Wednesday evening; disability benefit, $100 to $400; death benefit, $50.00 to $200 on death of member, and $25.00 to $50.00 on death of wife; hours of labor, 9; minimum daily wages, $2.00.

Bluehill.

Granite Cutters' International Association of America, Bluehill Branch. Secretary, W. G. Greene, Bluehill; date of organization, March 10, 1877; has trade agreement with employers which expires April 16, 1911; number of members, 71; qualifications for membership, three years' apprenticeship; initiation fee, $3.00 to $75.00; monthly dues, $1.00 until fifty years of age, and 50 cents until sixty years of age; times of meeting, monthly when called; death benefit, from $50.00 to $200, according to length of time of membership in the union; hours of labor, 8; minimum daily wages, $3.00.

Bluehill (East).

Quarryworkers' International Union of North America, Branch No. 8. Secretary, Forrest E. Grindle, East Bluehill; date of organization, November, 1902; has trade agreement with employers which expires May 1, 1908; number of members, 40; initiation fee, $1.00; monthly dues, 50 cents; times of meeting, first Monday after the fifteenth of each month; death benefit, $50.00; hours of labor, 8; minimum daily wages, $1.76.

Brewer (South).

International Brotherhood of Papermakers, Eastern Union, No. 82. Secretary, Morris L. Farnham, Box 43, South Brewer; date of organization, August 26, 1902; has no trade agreement with employers; number of members, 56; qualifications for membership, eight months' work as third hand on paper machine; initiation fee, $1.00; monthly dues, 55 to 65 cents; times of meeting, first Sunday after the fifth and twentieth of each month; hours of labor, 10; minimum daily wages, $1.50.

Pulp, Sulphite and Papermill Workers' Union, No. 36. Secretary, John A. Whelan, Box 181, South Brewer; date of organization, April 19, 1903; has no trade agreement with employers; number of members, 60; qualifications for membership, one month's work for Eastern Manufacturing Company; initiation fee, $1.00; monthly dues, 40 cents; times of meeting, first Sunday after twentieth of each month; no benefits; hours of labor, 10; minimum daily wages, $1.75.

International Brotherhood of Sawmill Workers and Woodsmen, No. 8. Secretary, S. J. Hardy, East Hampden; date of organization, June 8, 1902; has no trade agreement with employers; number of members, 160; qualifications for membership, good character; initiation fee, $2.00; monthly dues, 25 cents; times of meeting, every other Wednesday; no benefits; hours of labor, 10; minimum daily wages, $1.50.

Brownville (Henderson).

Brotherhood of Locomotive Engineers, Pleasant River Division, No. 440. Secretary, C. H. Small, Henderson; date of organization, May, 1890; has trade agreement with employers which may be terminated on thirty days' notice by either party; number of members, 18; qualifications for membership, must be a white American citizen who can read and write, and of good moral character; initiation fee, $10.00; monthly dues, 50 cents; times of meeting, first Monday and third Tuesday in each month; has insurance against loss of life, limbs or eyes, $1,500 to $4,500; hours of labor vary, but 10 hours is called a day; minimum daily wages, $3.05.

Brotherhood of Locomotive Firemen, Mount Katahdin Division, No. 469. Secretary, P. F. Thombs, Henderson; date of

organization, September 1, 1891; has trade agreement with employers which may be terminated on thirty days' notice by either party; number of members, 59; qualifications for membership, nine months' work as locomotive fireman or round-house hostler; initiation fee, $6.00; monthly dues, $1.83; times of meeting, second Sunday and fourth Monday in each month; has life insurance; hours of labor, 10; minimum daily wages, $1.95.

Brotherhood of Railroad Trainmen, No. 366. No return.

Brunswick.

Bricklayers, Masons and Plasterers' Union, No. 6. Secretary, Edwin A. Hammond, 11 McLellan street, Brunswick; date of organization, 1899; has no trade agreement with employers; number of members, 35; qualifications for membership, first-class workman in one or more of the trades; initiation fee, $10.00; monthly dues, 35 cents; times of meeting, every Monday evening; death benefit, assessment of $1.00 per member, and 50 cents per member on death of wife; hours of labor, 8; minimum daily wages, $3.25.

Cotton Mule Spinners' Association, No. 16. Secretary, Joseph Carlin, 63 Union street, Brunswick; date of organization, 1893; has trade agreement with employers, indefinite as to time; number of members, 18; qualifications for membership, must be a mule spinner; no initiation fee; monthly dues, 70 cents; times of meeting, every alternate Tuesday evening; has strike and lockout benefits; death benefit, $50.00 on death of member, and $25.00 on death of wife; hours of labor, 10; minimum daily wages, $2.00.

Calais.

Bricklayers, Masons and Plasterers' Union, No. 15. Secretary, John Rigley, Calais; date of organization, July 12, 1904; has no trade agreement with employers; number of members, 18; initiation fee, $10.00; monthly dues, 25 cents; times of meeting, last Monday in each month; no benefits; hours of labor, 9; minimum daily wages, $3.60.

Brotherhood of Railway Trainmen, Saint Croix Valley Lodge, No. 739. Secretary, Charles F. Spencer, Box 212, Calais; date of organization, November 12, 1905; has trade agreement with

employers which may be terminated on thirty days' notice by either party; number of members, 32; qualifications for membership, must be a white American citizen, from eighteen to forty-five years of age, able to read and write, and of good moral character; initiation fee, $4.00; monthly dues, governed by amount of insurance; times of meeting, first and third Sundays in each month; life insurance, $500 to $1,350; hours of labor, 11 and 12; minimum daily wages, $1.80.

Calais (Red Beach).

Granite Polishers, Quarrymen and Laborers' Union, No. 10,306. Secretary, Martin P. Mingo, Red Beach; date of organization, September 20, 1902; has trade agreement with employers which expires March 1, 1907; number of members, 25; initiation fee, $1.00; monthly dues, 25 cents; times of meeting, second Monday in each month; no benefits; hours of labor, 9; minimum daily wages, $1.50.

Caribou.

International Brotherhood of Maintenance of Way Employes, Caribou Lodge. Secretary, John Small, Caribou.

Cushing.

Lobster Fishermen's Union. Secretary, H. V. Robinson, Port Clyde, care Burnt Island; date of organization, June 1, 1906; number of members, 20; initiation fee, $1.00; monthly dues, 25 cents; times of meeting, every Friday evening; no benefits.

Deer Isle (Sunshine).

Lobster Fishermen's Union, No. 11,898. Secretary, D. L. Conary, Sunshine; date of organization, May 27, 1905; number of members, 34; initiation fee, $1.00; monthly dues, 25 cents; times of meeting, twice a month.

East Livermore (Livermore Falls).

International Brotherhood of Papermakers, No. 11. Secretary, Ben Gallant, Box 146, Chisholm; date of organization, March, 1902; has trade agreement with employers; number of

members, 58; qualifications for membership, one year's work on paper machine; initiation fee, $1.00; monthly dues, 65 cents; times of meeting, third Sunday in each month; minimum daily wages, $1.65.

Pulp, Sulphite and Papermill Workers' Union, No. 18. Secretary, B. N. Tretheway, Chisholm; date of organization, reorganized January 12, 1906; number of members, 200; qualifications for membership, must be papermill worker, but not papermaker; initiation fee, $1.00; monthly dues, 35 cents; times of meeting, second Sunday in each month; no benefits; hours of labor, tour workers 8, others 9; minimum daily wages, $1.65.

Eden (Bar Harbor).

Bricklayers, Masons and Stonemasons' Union, No. 4. Secretary, J. M. Milliken, 3 Hancock place, Bar Harbor; date of organization, December 8, 1901; has no trade agreement with employers; number of members, 54; qualifications for membership, must be first-class mason; initiation fee, $20.00; monthly dues, 50 cents; times of meeting, every Wednesday evening; death benefit, assessment of $1.00 per member; hours of labor, 8; minimum daily wages, $3.20.

Brotherhood of Painters, Decorators and Paperhangers of America, No. 142. Secretary, Joseph A. Stevens, 18 Maple avenue, Bar Harbor; date of organization, May 30, 1900; has no trade agreement with employers; number of members, 67; qualifications for membership, fair moral character, and able to command the minimum wage; initiation fee, $20.00; monthly dues, 50 cents; times of meeting, every Monday at 7.30 P. M.; death benefit, $200 on death of member, and $50.00 on death of wife; hours of labor, 8; minimum daily wages, $2.75.

Federal Labor Union, No. 10,651. Secretary, Burton Day, 48 Eden street, Bar Harbor; date of organization, January 13, 1903; has no trade agreement with employers; number of members, 300; qualifications for membership, any laborer eighteen years of age who is not eligible to membership in any national trade union; initiation fee, $3.00; monthly dues, 50 cents; times of meeting, every Saturday evening; sick benefit, $3.00 per week; hours of labor, 8; minimum daily wages, $2.00.

United Association of Journeymen Plumbers, Gasfitters, Steamfitters and Steamfitters' Helpers of United States and

Canada, No. 416. Secretary, Fred L. Roberts, Bar Harbor; date of organization, April 4, 1903; has no trade agreement with employers; number of members, 12; qualifications for membership, must be a competent workman at the trade; initiation fee, $10.00; weekly dues, 30 cents; times of meeting, every Tuesday evening; hours of labor, 8; minimum daily

United Brotherhood of Carpenters and Joiners of America, wages, $3.50.

No. 459. Secretary, Daniel M. West, Bar Harbor; date of organization, April 4, 1903; trade agreement with employers pending; number of members, 200; qualifications for membership, good habits and ability to command the minimum wage; initiation fee, $20.00; monthly dues, 59 cents; times of meeting, every Thursday evening; disability benefit, $100 to $400; death benefit, $100 to $200, and $50.00 on death of wife; hours of labor, 8; minimum daily wages, $2.75.

Frankfort.

Granite Cutters' International Association of America, Mount Waldo Branch. Secretary, P. H. Kane, Frankfort; date of organization, 1877; has trade agreement with employers which expires March, 1908; number of members, 150; qualifications for membership, ability to earn the minimum wage; initiation fee, natives, $3.00, foreigners, $25.00; monthly dues, $1.00; times of meeting, monthly; death benefit, $200; hours of labor, 8; minimum daily wages, $3.00.

Paving Cutters' Union of the United States and Canada. Secretary, John McLennan, R. F. D. No. 1, Box 10, Frankfort; date of organization, June 28, 1905; has trade agreement with employers which expires May 1, 1907; number of members, 61; qualifications for membership, must be a practical workman at the trade; initiation fee, $1.55; monthly dues, 30 cents; times of meeting, monthly; death benefit, $75.00; hours of labor, 8; minimum daily wages, average $2.00, all piece work.

Quarryworkers' International Union of North America. Secretary, Byron E. Averill, Frankfort; date of organization, June 15, 1905; has trade agreement with employers which expires March 1, 1907; number of members, 160; initiation fee, $1.00; monthly dues, 50 cents; times of meeting, sixteenth of

each month; death benefit, $50.00; hours of labor, 8; minimum daily wages, $1.65.

Franklin.

Granite Cutters' International Association of America, Franklin Branch. Secretary, J. H. Bunker, Franklin; date of organization, November 1, 1902; has trade agreement with employers which expires May 1, 1907; number of members, 25; qualifications for membership, three years' apprenticeship; initiation fee, $3.00; monthly dues, $1.00; times of meeting, twenty-first of each month; death benefit, $200; hours of labor, 8; minimum daily wages, $3.00.

Fryeburg.

Quarryworkers' International Union of North America, Branch No. 99. Secretary, G. R. Cameron, Fryeburg; date of organization, June 28, 1906; has trade agreement with employers which expires July 1, 1907; number of members, 16; initiation fee, $1.00; monthly dues, 50 cents; times of meeting, twenty-third of each month; hours of labor, 8; minimum daily wages, $1.75.

Gardiner.

Bricklayers, Masons and Plasterers' Union, No. 12. Secretary, E. E. Brookings, R. F. D. No. 10, Gardiner; date of organization, November 29, 1902; has no trade agreement with employers; number of members, 19; initiation fee, $10.00; monthly dues, 25 cents; times of meeting, second and fourth Saturdays in each month; no benefits; hours of labor, 8; minimum daily wages, stonemasons, $2.50; all others, $3.00.

Federal Labor Union, No. 11,185. Secretary, A. F. P. Collins, R. F. D. No. 9, Gardiner; date of organization, August 17, 1903; has no trade agreement with employers; number of members, 25; qualifications for membership, must be an able-bodied man; initiation fee, $2.00; monthly dues, 25 cents; times of meeting, once in two weeks; no benefits; hours of labor, 10; minimum daily wages, $4.00.

International Brotherhood of Stationary Firemen, No. 186. Secretary, D. A. Wing, Gardiner; date of organization, 1902; has no trade agreement with employers; number of members,

27; qualifications for membership, must be a fireman or helper; initiation fee, $2.00; monthly dues, 50 cents; times of meeting, first and second Saturdays in each month; no benefits; hours of labor, 8; minimum daily wages, $2.00.

Gardiner (South).

Pulp, Sulphite and Papermill Workers' Union, No. 40. Secretary, Parker O'Donnell, South Gardiner; date of organization, reorganized July 19, 1906; has no trade agreement with employers; number of members, 20; initiation fee, $1.00; monthly dues, 25 cents; times of meeting, twice a month; no benefits; hours of labor, 10 and 13.

Hallowell.

Boot and Shoeworkers' Union, Lasters. Secretary, G. S. Trask, Hallowell; date of organization, December 21, 1901; has trade agreement with employers, indefinite as to time; number of members, 33; qualifications for membership, must be a laster, puller, or sole tacker; initiation fee, 25 cents; dues assessed when needed; times of meeting, monthly; no benefits; hours of labor, 9; minimum daily wages, $1.75.

Federal Labor Union, No. 10,909. Secretary, George W. Varney, Hallowell; date of organization, 1903; has trade agreement with employers which expires March 1, 1908; number of members, 37; qualifications for membership, must be a working man; initiation fee, $2.00; monthly dues, 25 cents; times of meeting, second Wednesday in each month; no benefits; hours of labor, 8; minimum daily wages, 1.75.

Granite Cutters' International Association of America, Hallowell Branch. Secretary, Isaiah B. Hosken, Hallowell; date of organization, 1887; has trade agreement with employers which expires in 1908; number of members, 200; qualifications for membership, three years' apprenticeship; initiation fee, $3.00 and upwards; monthly dues, $1.00; times of meeting, first Monday after the fifteenth of each month; has strike benefit; death benefit, $200; hours of labor, 8; minimum daily wages, $3.00.

Knights of Labor, Shoe Cutters' Assembly, No. 1,555. Secretary, Webster T. Getchell, Hallowell; date of organization, June 4, 1905; has trade agreement with employers which ex-

pires December 1, 1906; number of members, 30; qualifications for membership, must be a shoe cutter; initiation fee, $2.00; monthly dues, 40 cents; times of meeting, every Friday evening; no benefits; hours of labor, 9; all piece work.

Quarryworkers' International Union of North America, Hallowell Branch, No. 29. Secretary, Frank K. Allen, R. F. D. No. 8, Hallowell; date of organization, March 24, 1902; has trade agreement with employers which expires July 1, 1909; number of members, 95; qualifications for membership, must be a competent workman; initiation fee, $1.00; monthly dues, 50 cents; times of meeting, first and third Mondays in each month; death benefit, $50.00; hours of labor, 8; minimum daily wages, $1.75 to $2.00, according to class of work.

Houlton.

Brotherhood of Locomotive Engineers, Grindstone Division, No. 588. No return.

Brotherhood of Locomotive Firemen, Pine Cone Division, No. 587. No return.

Brotherhood of Railroad Trainmen, Aroostook Lodge, No. 303. No return.

International Brotherhood of Maintenance of Way Employes, Houlton Lodge. Secretary, O. T. Olson, Houlton; date of organization, November, 1903; has trade agreement with employers which may be terminated on thirty days' notice by either party; number of members, 50; qualifications for membership, must be of white parentage, able to read and write, sober, moral, and of general good character; initiation fee, $2.00; monthly dues, 50 cents; times of meeting, second Tuesday in each month; no benefits; hours of labor, 10; minimum daily wages, $1.60; maximum, $3.00.

Hurricane Isle.

Granite Cutters' International Association of America, Hurricane Branch. Secretary, John Naion, Hurricane Isle; date of organization, March 10, 1877; has trade agreement with employers which expires March 1, 1908; number of members, 100; qualifications for membership, must be a granite cutter; initiation fee, $1.25; monthly dues, $1.00; times of meeting,

monthly; death benefit, $50.00 to $200; hours of labor, 8; minimum daily wages, $3.00.

Paving Cutters' Union of United States and Canada, Branch No. 10. Secretary, Samuel Morrison, Hurricane Isle; date of organization, October 15, 1901; has trade agreement with employers which expires April 30, 1907; number of members, 20; initiation fee, $1.00; monthly dues, 30 cents; times of meeting, monthly; death benefit, $75.00; hours of labor, 8.

Quarryworkers' International Union of North America, Branch No. 37. Secretary, Robert E. Aldrich, Hurricane Isle; date of organization, December 4, 1903; has trade agreement with employers which expires in 1908; number of members, 51; qualifications for membership, must be a quarryman; initiation fee, $1.00; monthly dues, 50 cents; times of meeting, monthly; death benefit, $50.00; hours of labor, 8; minimum daily wages, $1.75 to $2.00.

Isle au Haut.

Lobster Fishermen's Union, No. 11,855. Secretary, Frank Barton, Isle au Haut; date of organization, April 17, 1905; number of members, 28; qualifications for membership, must be a lobster fisherman; initiation fee, $1.00; monthly dues, 25 cents; times of meeting, monthly.

Jay (Chisholm).

International Brotherhood of Stationary Firemen, No. 70. No return.

Jay (North).

Granite Cutters' International Association of America, North Jay Branch. Secretary, Carl Hall, Wilton; date of organization, March 10, 1877; has trade agreement with employers which expires May 1, 1908; number of members, 135; qualifications for membership, three years' apprenticeship; initiation fee, $1.00; monthly dues, $1.00; times of meeting, monthly; death benefit, $225; hours of labor, 8; minimum daily wages, $3.00.

Quarryworkers' International Union of North America, Branch No. 4. Secretary, James Stevenson, North Jay; date of organization, April 24, 1902; has trade agreement with

employers which expires May 24, 1907; number of members, 100; initiation fee, $1.00; monthly dues, 50 cents; times of meeting, last Monday in each month; death benefit, $50.00; hours of labor, 8; minimum daily wages, $1.85.

Jonesport.

Lobster Fishermen's Union. Secretary, Frank C. Alley, Jonesport; date of organization, October 16, 1905; number of members, 31; initiation fee, 50 cents; monthly dues, 25 cents; times of meeting, every Saturday evening; no benefits.

Jonesport (Beals).

Lobster Fishermen's Union, No. 11,923. No returns.

Lewiston.

American Federation of Musicians. Secretary, Harry E. Bacon, 22 South Goff street, Lewiston; date of organization, May 14, 1905; number of members, 134; initiation fee, $5.00; times of meeting, first Sunday in each month; death benefit, $50.00.

Bricklayers, Masons and Plasterers' Union, No. 1. Secretary, M. F. Pettingill, 10 Lowell street, Lewiston; date of organization, August 20, 1888; has no trade agreement with employers; number of members, 110; qualifications for membership, must be a practical bricklayer, stonemason or plasterer; initiation fee, $11.50; monthly dues, 50 cents; times of meeting, every Monday evening; death benefit, $50.00 to $100, according to length of time of membership; hours of labor, 8; minimum daily wages, $3.50.

Brotherhood of Painters, Decorators and Paperhangers of America, No. 854. Secretary, A. E. Newell, 126 First street, Auburn; date of organization, January 30, 1903; has no trade agreement with employers; number of members, 87; qualifications for membership, must be of good health and morals, not over fifty years of age, and able to command the minimum wage; initiation fee, $10.00; monthly dues, 55 cents; times of meeting, every Tuesday evening; sick benefit, $3.00 per week; death benefit, $200; hours of labor, 8; minimum daily wages, $2.25.

Cigarmakers' International Union of America, No. 66. Secretary, Charles O. Beals, 66 Court street, Auburn; date of organization, 1887; has no trade agreement with employers; number of members, 55; qualifications for membership, three years' apprenticeship; initiation fee, $3.00; weekly dues, 30 cents; times of meeting, first Thursday in each month; has traveling, sick, strike, out of work and death benefits; hours of labor, 8; minimum daily wages, $2.50.

Cotton Mule Spinners' Association, No. 4. Secretary, John C. Booth, 188 Third street, Auburn; date of organization, 1892; has no trade agreement with employers; number of members, 100; qualifications for membership, must be good and industrious; no initiation fee; monthly dues, $1.00; times of meeting, alternate Fridays; has death benefit; hours of labor, 10; minimum daily wages, $1.75.

Granite Cutters' International Association of America. Secretary, Charles Kernan, 9 High street, Lewiston; date of organization, April 15, 1890; has trade agreement with employers which expires May 1, 1908; number of members, 33; qualifications for membership, three years' apprenticeship; initiation fee, $2.00; monthly dues, $1.00; times of meeting, monthly; death benefit, $50.00 to $200, according to length of time of membership; hours of labor, 8; minimum daily wages, $3.00.

Iron Moulders' Union of North America, No. 306. No return.

Journeymen Barbers' International Union, No. 482. Secretary, E. T. Baker, 193 Main street, Lewiston; date of organization, February 1, 1904; has no trade agreement with employers; number of members, 32; qualifications for membership, three years' apprenticeship; initiation fee, $3.00; monthly dues, 60 cents; times of meeting, third Monday in each month; sick benefit, $5.00 per week not to exceed twenty weeks in any one year; hours of labor, 13; minimum daily wages, $2.00.

Shirt, Waist and Laundry Workers' International Union. Secretary, Sylva Villeneuve, 119 Pearl street, Lewiston; date of organization, August 14, 1906; has no trade agreement with employers; number of members, 30; qualifications for membership, six months' work at some part of the trade; initiation fee, $1.00; monthly dues, 50 cents; times of meeting, second and fourth Wednesdays in each month; hours of labor, 9; minimum daily wages, $1.75.

United Brotherhood of Carpenters and Joiners of America, No. 407. Secretary, Edward H. Goddard, 1 Dell court, Auburn; date of organization, May 11, 1888; has no trade agreement with employers; number of members, 140; qualifications for membership, must be a journeyman carpenter or joiner, stairbuilder, shipjoiner, millwright, planing mill bench hand, cabinet-maker, car builder or running wood-working machinery, of good character, and competent to command standard wages; initiation fee, $10.00; monthly dues, 65 and 45 cents; times of meeting, every Wednesday evening; sick benefit, $3.00 per week, not exceeding nine weeks in any one year; disability benefit, $100 to $400; death benefit, $100 to $200, and $25.00 to $50.00 on death of wife; hours of labor, 8; minimum daily wages, $2.50.

Lisbon (Falls).

International Brotherhood of Papermakers, Androscoggin Lodge, No. 15. Secretary, Thomas H. Dickenson, Lisbon Falls; date of organization, August, 1899; has no trade agreement with employers; number of members, 60; qualifications for membership, one year's work at the trade; initiation fee, $1.00; monthly dues, 55 cents; times of meeting, monthly; no benefits; hours of labor, 11 by day, 13 by night.

International Brotherhood of Stationary Firemen, No. 247. Secretary, C. A. Parks, Lisbon Falls; has no trade agreement with employers; number of members, 19; qualifications for membership, must be a stationary engineer, fireman or oiler; initiation fee, $1.50; monthly dues, 50 cents; times of meeting, first and third Saturdays in each month; no benefits; hours of labor, 10 by day, 13 by night; minimum daily wages, coal passers, $1.65; firemen, $1.75; head firemen, $2.25; engineers, $2.50.

Pulp, Sulphite and Papermill Workers' Union, No. 26. Secretary, W. C. Winn, Lisbon Falls; date of organization, January 20, 1903; has no trade agreement with employers; number of members, 52; initiation fee, $1.00; monthly dues, 35 cents; times of meeting, first Sunday in each month; no benefits; hours of labor, 11 by day, 13 by night; minimum daily wages, $1.65.

Long Island Plantation.

Quarryworkers' International Union of North America, Black Island Branch, No. 53. Secretary, Sumner Morrill, Gott's Island; date of organization, March 26, 1903; has trade agreement with employers which expires May 15, 1907; number of members, 17; initiation fee, $1.00; monthly dues, 50 cents; times of meeting, twentieth of each month; death benefit, $50.00; hours of labor, 8; minimum daily wages, $1.50 to $2.00, according to class of work.

Madison.

Federal Labor Union, No. 11,643. Secretary, William F. Young, Madison; date of organization, April 11, 1904; has trade agreement with employers, indefinite as to time; number of members, 30; qualifications for membership, must have trade or be serving an apprenticeship such as blacksmith helper, mason tender, or machinist helper; initiation fee, $3.00; monthly dues, 35 cents; times of meeting, twice a month; no benefits; hours of labor, 9; minimum daily wages, $2.00.

International Brotherhood of Papermakers, Kennebec Lodge, No. 73. Secretary, B. H. Reid, Box 1, Madison; date of organization, August 3, 1902; has trade agreement with employers which expires July 1, 1907; number of members, 54; qualifications for membership, one year's work at the trade; initiation fee, $3.00; monthly dues, 75 cents; times of meeting, second and fourth Thursdays in each month, at 7 P. M.; no benefits; hours of labor, 8; minimum daily wages, $1.50 to $3.50, according to class of work.

International Brotherhood of Stationary Firemen, No. 12. Secretary, G. T. Meserve, Madison; date of organization, July, 1902; has trade agreement with employers, indefinite as to time; number of members, 33; initiation fee, $3.00; monthly dues, 50 cents; times of meeting, second and last Saturdays in each month; benefits, members are cared for when in need; hours of labor, 8 for tour workers, 9 for all others; minimum daily wages, $1.91.

Pulp, Sulphite and Papermill Workers' Union, No. 17. Secretary, Daniel McDonald, Box 144, Madison; date of organization, April 7, 1903; had trade agreement with employers which

expired July 15, 1906; number of members, 225; qualifications for membership, must be a workman at a pulp mill; initation fee, $3.00; monthly dues, 35 cents; times of meeting, every Friday at 7 P. M.; no benefits; hours of labor, 8 for tour workers, 9 for all others; minimum daily wages, $1.50 to $2.75, according to class of work.

United Brotherhood of Carpenters and Joiners of America, No. 1,031. Secretary, A. S. Skillins, Anson; date of organization, March 19, 1902; has no trade agreement with employers; number of members, 45; qualifications for membership, journeyman carpenter of good deportment and competent to command the standard wage; initiation fee, $5.00; monthly dues, 50 and 30 cents; times of meeting, first and third Mondays in each month; death benefit, $50.00 to $400; hours of labor, 9; minimum daily wages, $2.25.

United Textile Workers of America. Secretary, William Rodes, Anson; date of organization, April 12, 1906; has no trade agreement with employers; number of members, 75; qualifications for membership, must be a bona fide wage earner; initiation fee, $1.00; monthly dues, 25 cents; times of meeting, first Monday in each month; no benefits; hours of labor, 10; minimum daily wages, $1.50.

Matinicus Isle Plantation.

Lobster Fishermen's Union. No return.

Milbridge.

Lobster Fishermen's Union, No. 11,945. Secretary, Eugene A. Manchester, R. F. D. No. 2, Box 40, Milbridge; date of organization, September 13, 1905; number of members, 32; qualifications for membership, must be a lobster fisherman; initiation fee, $1.00; monthly dues, 25 cents; times of meeting, every Thursday evening.

Millinocket.

Federal Trades Union, No. 11,311. Secretary, L. J. Folsom, Millinocket; date of organization, July 1, 1903; has trade agreement with employers, indefinite as to time; number of members, 35; qualifications for membership, must be eighteen

years of age and not eligible to membership in a national trade union; initiation fee, $3.00; monthly dues, 50 cents; times of meeting, first Monday evening in each month; strike and lockout benefits, $3.00 to $5.00 per week; hours of labor, 9; minimum daily wages, $1.75 to $3.50.

International Brotherhood of Electrical Workers of America, No. 471. Secretary, Weston Lyon, Millinocket; date of organization, September, 1903; has no trade agreement with employers; number of members, 8; qualifications for membership, three years' apprenticeship; initiation fee, $10.00; monthly dues, 60 cents; times of meeting, last Saturday in each month; death benefit, $100; hours of labor, 8; minimum daily wages, $2.50.

International Brotherhood of Maintenance of Way Employes, Millinocket Lodge. Secretary, John Gaskin, Braggville; number of members, 40.

International Brotherhood of Papermakers, No. 27. Secretary, George K. Walker, Millinocket; date of organization, May 6, 1902; had trade agreement with employers which expired June 30, 1906; number of members, 67; qualifications for membership, must be a boss machine tender, machine tender, back tender, third hand, inspector or beater engineer; initiation fee, $2.00; monthly dues, 75 cents; times of meeting, twice a month; no benefits; hours of labor, 8; minimum daily wages, $3.00.

International Brotherhood of Sawmill Workers and Woodsmen. Secretary, George Walls, Millinocket; date of organization, July 15, 1906; has trade agreement with employers which expires July 20, 1907; number of members, 22; qualifications for membership, must be a sawmill hand or woodsman over sixteen years of age; initiation fee, $3.00; monthly dues, 50 cents; times of meeting, last Thursday in each month; hours of labor, 9; minimum daily wages, $2.00.

International Brotherhood of Stationary Firemen, No. 69. Secretary, Fred H. Dyer, Box 329, Millinocket; date of organization, November 2, 1902; has trade agreement with employers which expires April 1, 1907; number of members, 51; qualifications for membership, must be a trustworthy fireman, oiler or helper; initiation fee, $4.00; monthly dues, 50 cents; times

of meeting, first and third Monday evenings in each month; no benefits; hours of labor, 8 and 9; minimum daily wages, $1.60.

International Brotherhood of Teamsters. Secretary, Harry Hanscome, Millinocket; date of organization, 1906; number of members, 18; times of meeting, monthly.

International Typographical Union, No. 622. Secretary, E. E. Morse, Millinocket; date of organization, December 20, 1904; has trade agreement with employers which expires January 1, 1907; number of members, 7; initiation fee, $5.00; monthly dues, 40 cents; times of meeting, first Tuesday in each month; hours of labor, 8; minimum weekly wages, $10.00.

Pulp, Sulphite and Papermill Workers' Union, No. 25. Secretary, W. I. Boyer, Millinocket; date of organization, January 20, 1903; had trade agreement with employers which expired July 1, 1906; number of members, 385; qualifications for membership, must be a pulp, sulphite and papermill worker; initiation fee, $2.00; monthly dues, 35 cents; times of meeting, fortnightly, Friday and Sunday alternately; no benefits; hours of labor, tour workers 8, all others 9; minimum daily wages, $1.50.

Retail Clerks' Protective Association. Secretary, E. B. Wilder, Millinocket; date of organization, November 9, 1905; has no trade agreement with employers; number of members, 9; qualifications for membership, one year's experience at the business; initiation fee, $3.00; monthly dues, 40 cents; times of meeting, when called by president; insurance benefit, $100; hours of labor, 8 to 12; minimum daily wages, $2.25 to $3.25.

Shirt, Waist and Laundry Workers' International Union, No. 20. Secretary, Mrs. F. H. Bragdon, Millinocket; date of organization, January, 1905; has trade agreement with employers which expires January, 1907; number of members, 7; qualifications for membership, must be a laundry worker; initiation fee, $4.00; monthly dues, 50 cents; times of meeting, first Thursday in each month; death benefit, $100; hours of labor, 9; minimum daily wages, $1.00 to $2.50.

United Brotherhood of Carpenters and Joiners of America, No. 1,707. Secretary, A. V. Marston, Millinocket; date of organization, July 16, 1903; number of members, 30; initiation fee, $5.00; monthly dues, 50 cents; times of meeting, last Friday in each month; death benefit, $200 on death of member, and $100 on death of wife; hours of labor, 9; minimum daily wages, $2.25.

Milo.

International Brotherhood of Maintenance of Way Employes, Milo Lodge. Secretary, W. S. Davis, R. F. D. No. 1, Dover; date of organization, November 23, 1903; has trade agreement with employers which may be terminated on thirty days' notice by either party; number of members, 60; initiation fee, foremen $3.00, all others $2.00; monthly dues, $1.00; times of meeting, second Monday in each month; hours of labor, 10; minimum daily wages, $1.60.

Mount Desert (Hall Quarry).

Granite Cutters' International Association of America. Secretary, Aaron Robertson, Hall Quarry; date of organization, 1898; has trade agreement with employers, indefinite as to time; number of members, 73; initiation fee, $10.00 to $25.00; monthly dues, $1.00; times of meeting, twentieth of each month; hours of labor, 8; minimum daily wages, $3.00.

Paving Cutters' Union of United States and Canada, Branch No. 26. Secretary, Thomas E. Haskins, Hall Quarry; date of organization, January 8, 1903; has trade agreement with employers which expires May 1, 1907; number of members, 38; qualifications for membership, must be a competent workman and not in bad standing in any other labor organization; initiation fee, $1.55; monthly dues, 30 cents; times of meeting, seventeenth of each month; death benefit, $75.00; hours of labor, 8; minimum daily wages, all piece work.

Quarryworkers' International Union of North America, Branch No. 7. Secretary, Eldon A. Davis, Hall Quarry; date of organization, October 31, 1903; has trade agreement with employers which expires March 1, 1907; number of members, 86; qualifications for membership, must not be in bad standing with any other labor organization; initiation fee, $1.00; monthly dues, 50 cents; time of meeting, eighteenth of each month; death benefit, $50.00; hours of labor, 8; minimum daily wages, $2.00.

Old Town.

Bricklayers, Masons and Plasterers' Union, No. 13. Secretary, Jasper Eastman, Milford; date of organization, March 18,

1903; has no trade agreement with employers; number of members, 21; initiation fee, $10.00; monthly dues, 25 cents; times of meeting, every Monday evening; hours of labor, 9; minimum daily wages, $3.50.

Orono.

International Brotherhood of Papermakers, No. 83. Secretary, Fred E. Murch, Box 113, Orono; date of organization, August 26, 1902; has trade agreement with employers which expires June 1, 1907; number of members, 24; qualifications for membership, two years' apprenticeship; initiation fee, $1.00 to $2.00; monthly dues, 40 cents; times of meeting, first and third Sundays in each month; hours of labor, 11 by day, 13 by night; minimum daily wages, $1.80.

Pulp, Sulphite and Papermill Workers' Union, No. 18. Secretary, John Dyer, Orono; date of organization, April 6, 1903; has no trade agreement with employers; number of members, 32; qualifications for membership, must be a pulp or papermill worker; initiation fee, $1.00; monthly dues, 50 cents; times of meeting, twice a month; no benefits; hours of labor, 10 by day, 13 by night; minimum daily wages, $1.65.

Portland.

American Federation of Musicians, No. 364. Secretary, Ira M. Davis, 25 Crescent avenue, South Portland; date of organization, February, 1904; has no trade agreement with employers; number of members, 174; qualifications for membership, must be a qualified musician; initiation fee, $5.00; annual dues, $1.00; times of meeting, monthly; death benefit, $50.00.

Atlantic Coast Seamen's Union, Portland Branch. Secretary, George T. Foley, 377 Fore street, Portland; date of organization, November 6, 1889; number of members, 3,500 on the whole Atlantic seaboard, but impossible to segregate those sailing out of Maine ports; qualifications for membership, must be an efficient seaman; initiation fee, $5.00; monthly dues, 70 cents; times of meeting, every week in all ports; shipwreck benefit, $20.00; accident benefit, $200; death benefit, $50.00; hours of labor, not limited; minimum daily wages, $1.00 and board.

Bakery and Confectionery Workers' International Union of America, No. 260. Secretary, D. J. McCarthy, 64 Clark street,

Portland; date of organization, October 18, 1902; no general trade agreement with employers; number of members, 40; initiation fee, $10.00; monthly dues, 75 cents; times of meeting, first and third Saturdays in each month; has strike, sick and death benefits; hours of labor, 10 by day, 9 by night; minimum weekly wages, $13.00.

Bricklayers' Protective Union, No. 2. Secretary, Frank J. Foley, rear of 121 Washington avenue, Portland; date of organization, Februrary 6, 1890; has no trade agreement with employers; number of members, 88; qualifications for membership, must be a good bricklayer; initiation fee, $15.00; monthly dues, 50 cents; times of meeting, every Monday evening; sick benefit, $5.00 per week; death benefit, $100; hours of labor, 8; minimum daily wages, $3.50.

Brotherhood of Boilermakers and Iron Shipbuilders of America, Dirigo Lodge, No. 142. Secretary, Bruno Doucette, 65 Adams street, Portland; date of organization, May 1, 1904; has no trade agreement with employers; number of members, 50; qualifications for membership, must be eighteen years of age, and at work at the trade; initiation fee, $5.00; monthly dues, 50 cents; times of meeting, every Friday; hours of labor, 10; minimum wages, 15 cents per hour.

Brotherhood of Locomotive Engineers, Division No. 40. Secretary, George W. Babb, 877 Congress street, Portland; date of organization, November 17, 1895; has trade agreement with employers; number of members, 225; qualifications for membership, six months' experience as a locomotive engineer; initiation fee, $10.00; annual dues, $5.50; times of meeting, second and fourth Sundays in each month; life insurance, $1,500 to $4,500; minimum daily wages, $4.00.

Brotherhood of Locomotive Firemen, Great Eastern Lodge, No. 4. Secretary, Albert E. Dennison, 10 Inverness street, Woodford's station, Portland; date of organization, December 1, 1873; has trade agreement with employers subject to change on thirty days' notice by either party, if approved by both; number of members, 134; qualifications for membership, must be white born, of good moral character, sober and industrious, sound in body and limb, eyesight normal, not less than eighteen years of age, able to read and write the English language, and must have served at least nine months as a locomotive fire-

man; initiation fee, $5.00; grand dues, $2.50 per annum; beneficiary dues, not less than $9.50 on $3,000, $6.50 on $2,000, $5.00 on $1,500, $3.50 on $1,000 and $2.00 on $500, payable quarterly in advance; times of meeting, first and third Sundays in each month; insurance benefit, from $500 to $3,000, payable upon death or total disability—inability to perform manual labor, loss of eyes, hand or foot considered total disability; hours of labor, 11 or less; minimum daily wages, $2.15.

Brotherhood of Painters, Decorators and Paperhangers of America, No. 237. Secretary, George H. Seaport, 167 Cumberland street, Portland; date of organization, October 29, 1900; has no trade agreement with employers; number of members, 300; qualifications for membership, must be competent to command the average wage; initiation fee, $5.00; monthly dues, 50 cents; times of meeting, first and third Thursdays in each month; death benefit, $100 to $150; hours of labor, 9; minimum daily wages, $2.25.

Brotherhood of Railroad Trainmen, No. 82. Secretary, Walter H. Kimball, 147 St. John street, Portland; date of organization, April 25, 1896; has trade agreement with employers, indefinite as to time; number of members, 450; qualifications for membership, white male, sober and industrious, from eighteen to forty-five years of age, with one year's experience as a train man; initiation fee, $3.00; monthly dues, 75 cents to $2.75; times of meeting, first and third Sundays in each month; sick benefit, $5.00 per week, not exceeding ten weeks in any one year; insurance benefit, $500, $1,000 or $1,350 for death, loss of arm or leg, or total disability; hours of labor, 10 in yard, 11 on road; minimum daily wages, $1.75.

Cigarmakers' International Union of America, No. 470. Secretary, Charles E. Downs, 51 Temple street, Portland; date of organization, 1901; has trade agreement with employers, indefinite as to time; number of members, 6; qualifications for membership, three years' apprenticeship; initiation fee, $3.00; monthly dues, $1.20; times of meeting, second Tuesday in each month; sick benefit, $5.00 per week; out of work benefit, $3.00 per week; death benefit, $50.00 to $500; hours of labor, 8; minimum daily wages, $2.50.

Coal Drivers' Union, No. 670. Secretary, Albert Davis, 16 Cotton street, Portland; date of organization, May 1, 1906; has

no trade agreement with employers; number of members, 90; qualifications for membership, good moral character; initiation fee, $1.00; monthly dues, 50 cents; times of meeting, first and third Sundays in each month; no benefits; hours of labor, 10; minimum daily wages, $1.50.

Granite Cutters' International Association of America, Portland Branch. Secretary, E. P. Clanson, 86A Pleasant street, Portland; date of organization, 1889; has trade agreement with employers which expires March 1, 1907; number of members, 60; qualifications for membership, three years' apprenticeship; initiation fee, from $1.00 to $50.00; monthly dues, $1.00; times of meeting, third Monday in each month; hours of labor, 8; minimum daily wages, $3.00.

International Association of Bridge and Structural Iron Workers. Secretary, James McDonald, 221 Federal street, Portland; date of organization, May, 1906; has no trade agreement with employers; number of members, 35; qualifications for membership, must be a competent workman; initiation fee, $25.00; monthly dues, 90 cents; times of meeting, every Friday evening; death benefit, $100; hours of labor, 10; minimum daily wages, $2.00.

International Association of Carworkers, Pine Cone Lodge, No. 161. Secretary, A. W. Sherwood, 8 New Douglass street, Portland; date of organization, August 11, 1903; has no trade agreement with employers; number of members, 73; initiation fee, $2.00; monthly dues, 25 cents; times of meeting, second and fourth Wednesdays in each month; no benefits; hours of labor, 9½.

International Association of Machinists, Oriental Lodge, No. 216. Secretary, R. P. Swan, 150 Free street, Portland; date of organization, May, 1901; has no trade agreement with employers; number of members, 20; qualifications for membership, must be white male, and have served four years' apprenticeship; initiation fee, $3.00; monthly dues, $1.00; times of meeting, first and second Tuesdays in each month; strike benefit, $7.00 per week; death benefit, $50.00 to $200; hours of labor, 10; minimum daily wages, $2.00.

International Brotherhood of Blacksmiths and Helpers, No. 452. Secretary, A. M. Grant, 1,091 Congress street, Portland; date of organization, May 31, 1906; has no trade agreement

with employers; number of members, 37; initiation fee, $3.00; monthly dues, 50 cents; times of meeting, first and third Fridays in each month; hours of labor, 9 and 10.

International Brotherhood of Electrical Workers of America, No. 399. Secretary, A. G. Moody, 49 Mayo street, Portland; date of organization, April 16, 1903; has no trade agreement with employers; number of members, 45; initiation fee, $5.00; monthly dues, 60 cents; times of meeting, twice a month; sick benefit, $4.00 per week; hours of labor, 9; minimum daily wages, $2.00.

International Brotherhood of Teamsters, No. 282. Secretary, S. R. McDonald, 84 York street, Portland; date of organization, June 6, 1901; has trade agreement with employers, indefinite as to time; number of members, 90; initiation fee, $2.00; quarterly dues, 75 cents; times of meeting, first and fourth Wednesdays in each month; has sick benefit; hours of labor, 10; minimum daily wages, $2.00.

International Hodcarriers and Building Laborers' Union of America, No. 8. Secretary, Val M. Canavan, 16 India street, Portland; date of organization, May 12, 1901; has no trade agreement with employers; number of members, 125; qualifications for membership, good moral character, and must be working at the business; initiation fee, $5.00; monthly dues, 50 cents; times of meeting, every Monday at 7.30 P. M.; sick benefit, $5.00 per week; death benefit, $50.00; hours of labor, 8; minimum daily wages, $2.25.

International Printing Pressmen's Union, No. 22. Secretary, Thomas J. Magner, 20 Deer street, Portland; date of organization, January 11, 1898; has trade agreement with employers which expires May 1, 1907; number of members, 50; qualifications for membership, twenty-one years of age, and four years' apprenticeship; initiation fee, $2.00; monthly dues, 50 cents; times of meeting, second Monday in each month; death benefit, $100 to pressmen, $75.00 to press feeders; hours of labor, 9; minimum weekly wages, $9.00 to $18.00.

International Typographical Union, No. 66. Secretary, Matthew S. Burke, 83 Anderson street, Portland; date of organization, 1885; has no trade agreement with employers; number of members, 75; qualifications for membership, four years' apprenticeship; initiation fee, $2.00; monthly dues, 60 cents;

times of meeting, second Sunday in each month; death benefit, $75.00; hours of labor, 9; minimum weekly wages, $15.00.

Iron Moulders' Union of North America, No. 248. Secretary, Thomas J. O'Neil, 10 Madison street, Portland; date of organization, August 29, 1906; has no trade agreement with employers; number of members, 73; qualifications for membership, four years' apprenticeship; initiation fee, $5.00; monthly dues, $1.00; times of meeting, second and fourth Tuesdays in each month; sick benefit, $5.00 per week, not exceeding thirteen weeks in any one year; death benefit, $100 to $200 according to length of time of membership; hours of labor, 9; minimum daily wages, $2.75.

Journeymen Barbers' International Union, No. 210. Secretary, Joseph H. DeCosta, 217 Federal street, Portland; date of organization, April 4, 1900; has no trade agreement with employers; number of members, 52; qualifications for membership, three years' apprenticeship; initiation fee, $3.00; monthly dues, 60 cents; times of meeting, first and third Thursdays in each month; has sick benefit; death benefit, $60.00 to $500, according to length of time of membership; hours of labor, 11¼; minimum daily wages, $2.00.

Longshore Carpenters' Association, No. 1. Secretary, W. J. Wilkinson, 14 Middle street, Portland; date of organization, 1898; has no trade agreement with employers; number of members, 150; qualifications for membership, must be an American citizen; initiation fee, $6.00; monthly dues, 25 cents; times of meeting, second and fourth Wednesdays in each month; sick benefit, $3.00 per week; death benefit, $50.00; hours of labor, unlimited; minimum wages, 30 cents per hour.

Longshoremen's Benevolent Society. Secretary, John P. Hamilton, 33 Danforth street, Portland; date of organization, 1880; has no trade agreement with employers; number of members, 500; qualifications for membership, must be able bodied; initiation fee, $5.00; monthly dues, 50 cents; times of meeting, every Tuesday evening; sick benefit, $5.00 per week; death benefit, $100; hours of labor, 10; minimum weekly wages, average $13.00.

Order of Railroad Telegraphers, Portland Division, No. 95. Secretary, E. J. Hayes, Leeds Junction; date of organization, May 20, 1904; has trade agreement with employers, indefinite

as to time; number of members, 124; qualifications for membership, any white person of good moral character, eighteen years of age or over, employed on a railroad as telegrapher, or connected with signal towers, etc.; initiation fee, $8.00; semi-annual dues, $4.00; times of meeting, third Thursday in each month; hours of labor, 11; minimum monthly wages, $47.50.

Order of Railway Conductors, Pine Tree Division, No. 66. Secretary, W. Sprague, 810 Congress street, Portland; date of organization, March 19, 1890; has annual trade agreements with employers; number of members, 138; qualifications for membership, good moral character, and six months' experience as a conductor; initiation fee, $5.00; no dues; times of meeting, third Sunday in each month; has compulsory insurance of at least $1,000.

Retail Clerks' International Protective Association, No. 674. Secretary, Joseph E. Coyne, 54 Danforth street, Portland; has no trade agreement with employers; number of members, 20; qualifications for membership, must be a retail clerk in any business except the liquor traffic; initiation fee, $1.00; monthly dues, 25 cents; times of meeting, first and third Wednesdays in each month; death benefit, $100 after one year's membership; hours of labor, 10.

United Association of Journeymen Plumbers, Gasfitters, Steamfitters and Steamfitters' Helpers of United States and Canada, No. 17. Secretary, John F. Kane, 191 Cumberland avenue, Portland; date of organization, May 21, 1904; has no trade agreement with employers; number of members, 41; initiation fee, $10.00; weekly dues, 30 cents; times of meeting, every Tuesday evening; sick benefit, $5.00 per week; death benefit, $100; hours of labor, 9; minimum daily wages, $2.25.

United Brotherhood of Carpenters and Joiners of America, No. 517. Secretary, J. F. Cressy, 51 Moody street, Portland; date of organization, March 12, 1900; has no trade agreement with employers; number of members, 450; qualifications for membership, must be eighteen years of age, of good moral character, and ability to command the average wage; initiation fee, $5.00; monthly dues, 50 cents; times of meeting, every Friday evening; sick benefit, $2.00 per week for ten weeks; disability benefit, $100 to $400, according to length of time of member-

ship; death benefit, $200; hours of labor, 9; minimum daily wages, $2.25.

United Brotherhood of Leatherworkers on Horse Goods, No. 136. Secretary, C. M. Godfrey, 34 Free street, Portland; date of organization, May 26, 1903; has no trade agreement with employers; number of members, 12; qualifications for membership, must be competent to fit, stitch and finish; initiation fee, $3.00; monthly dues, $1.00; times of meeting, first and third Wednesdays in each month; sick benefit, $5.00 per week; hours of labor, June to September inclusive, 55 per week; October to May inclusive, 59 per week; minimum weekly wages, $10.00.

Rockland.

Cigarmakers' International Union of America. Secretary, M. F. Kalloch, Thomaston; date of organization, September, 1892; has trade agreement with employers, indefinite as to time; number of members, 15; qualifications for membership, three years' apprenticeship, and must be twenty-one years of age; initiation fee, $3.00; monthly dues, $1.20; times of meeting, first Friday evening in each month; sick benefit, $5.00 per week; hours of labor, 8; minimum daily wages, $3.00.

Journeymen Barbers' International Union, No. 509. Secretary, Harry T. Small, 368 Main street, Rockland; date of organization, August 4, 1905; has no trade agreement with employers; number of members, 16; qualifications for membership, three years' apprenticeship, and not over fifty years of age; initiation fee, $3.00; monthly dues, 60 cents; times of meeting, first Thursday in each month; sick benefit, $5.00 per week; death benefit, $60.00 to $500; hours of labor, 14 for five days, and 18 Saturdays; minimum daily wages, $1.67 to $2.00.

Lime Trimmers' Union. Secretary, Sam M. Hanson, 28 Suffolk street, Rockland; date of organization, March, 1905; has no trade agreement with employers; number of members, 22; qualifications for membership, must be a lime trimmer; initiation fee, $1.00; monthly dues, 25 cents; times of meeting, first Wednesday in each month; hours of labor, 10; minimum daily wages, $1.75.

Limeworkers' Union, No. 196. Secretary, Frank J. Gehrmann, 13 Hall street, Rockland; date of organization, August 31, 1904; has no trade agreement with employers; number of

members, 26; qualifications for membership, must be a lime-burner; initiation fee, $1.00; monthly dues, 25 cents; times of meeting, monthly; hours of labor, 12; minimum daily wages, $1.87½.

Quarryworkers' International Union of North America, No. 73. Secretary, W. C. Ulmer, R. F. D., Rockland; date of organization, April 1, 1905; has no trade agreement with employers; number of members, 41; initiation fee, $1.00; monthly dues, 50 cents; times of meeting, first Saturday in each month; sick or disability benefit, $2.00 per week for ten weeks, and $1.00 per week for remainder of disability; hours of labor, 10; minimum daily wages, $1.75.

Rumford (Falls).

Bricklayers, Masons and Plasterers' Union, No. 10. Secretary, G. Lapham, 13 Pine street, Rumford Falls; date of organization, December 4, 1900; has no trade agreement with employers; number of members, 34; initiation fee, $14.50; monthly dues, 50 cents; times of meeting, first and third Fridays in each month; death benefit, assessment of $1.00 per member; hours of labor, 8; minimum daily wages, $3.50.

International Brotherhood of Papermakers, No. 9. Secretary, Edward J. Sheehan, Box 25, Mexico; date of organization, 1901; has no trade agreement with employers; number of members, 150; initiation fee, $2.00; monthly dues, 65 cents; times of meeting, first and third Sundays in each month.

Paper Box, Bag and Novelty Workers' Union. Secretary, Miss Jennie Gauthier, 42 River street, Rumford Falls; date of organization, August 29, 1906; has no trade agreement with employers; number of members, 225; monthly dues, 25 cents; times of meeting, second and fourth Mondays in each month; hours of labor, 10; minimum daily wages, $1.16⅔.

Pulp, Sulphite and Papermill Workers' Union, No. 25. Secretary, Charles E. Leighton, Box 271, Rumford Falls; date of organization, July 30, 1902; has trade agreement with employers, indefinite as to time; number of members, 350; qualifications for membership, all workmen in pulp and paper mills, except papermakers; initiation fee, $1.00; monthly dues, 25 cents; times of meeting, second and fourth Sundays in each month; death benefit, $50.00; hours of labor, tour workers 11

by day, 13 by night; all others 9; minimum daily wages, tour workers $2.00, all others $1.65.

United Brotherhood of Carpenters and Joiners of America, No. 776. Secretary, Arthur D. Kidder, Ridlonville; date of organization, September 1, 1904; has no trade agreement with employers; number of members, 19; qualifications for membership, must be a journeyman carpenter of good habits, and capable of demanding the minimum wage; initiation fee, $5.00; monthly dues, 50 cents; times of meeting, first and third Wednesday evenings in each month; death benefit, from $50.00 to $400 on death of member, and $25.00 to $50.00 on death of wife; hours of labor, 10; minimum daily wages, $2.50.

Saco.

Loomfixers' Union, No. 54. Secretary, Charles H. Coburn, 2 Gray avenue, Saco; date of organization, December 30, 1898; has no trade agreement with employers; number of members, 125; qualifications for membership, must be a loomfixer in good health; initiation fee, $2.00; monthly dues, 60 cents; times of meeting, alternate Fridays; sick benefit, $4.00 per week; hours of labor, 10; minimum daily wages, $2.00.

Saint George (Clark Island).

Granite Cutters' International Association of America, Clark Island Branch. Secretary, S. H. Dickey, Clark Island; date of organization, March 10, 1877; has trade agreement with employers which expires in 1908; number of members, 60; initiation fee, $3.00 to $25.00; monthly dues, $1.00; times of meeting, from the 15th to the 20th of each month; hours of labor, 8; minimum daily wages, $3.00.

Quarryworkers' International Union of North America. Secretary, Robert C. Monaghan, Clark Island; date of organization, 1903; has trade agreement with employers which expires March 1, 1908; number of members, 30; initiation fee, $1.00; monthly dues, 50 cents; times of meeting, first Saturday in each month; death benefit, $50.00; hours of labor, 8; minimum daily wages, $1.80.

Saint George (Long Cove).

Paving Cutters' Union of United States and Canada. Secretary, Albert Slingsby, Long Cove; date of organization, 1898; has no trade agreement with employers; number of members, 11; qualifications for membership, must be an average workman at the trade; initiation fee, $1.00; monthly dues, 30 cents; times of meeting, third Tuesday in each month; death benefit, $75.00; hours of labor, 9; minimum daily wages, $2.00.

Saint George (Spruce Head).

Lobster Fishermen's Union, No. 11,986. Secretary, Hugh F. Snow, Spruce Head; date of organization, January 15, 1906; number of members, 50; initiation fee, 50 cents; monthly dues, 25 cents; times of meeting, weekly; no benefits.

Skowhegan.

Bricklayers, Masons and Plasterers' Union, No. 11. Secretary, James A. Brown, 67 Court street, Skowhegan; date of organization, August 1, 1901; has no trade agreement with employers; number of members, 17; qualifications for membership, good workmanship; initiation fee, $10.00; monthly dues, 25 cents; times of meeting, second and fourth Mondays in each month; death benefit, assessment of $1.00 on death of member, and 50 cents on death of wife; hours of labor, 9; minimum daily wages, $3.25.

Brotherhood of Painters, Decorators and Paperhangers of America, No. 648. Secretary, F. C. Burrill, 18 Bush street, Skowhegan; date of organization, April 28, 1902; has no trade agreement with employers; number of members, 10; qualifications for membership, good moral standing, and ability to command the union wage; initiation fee, $5.00; monthly dues, 50 cents; times of meeting, every Tuesday at 7.30 P. M.; hours of labor, 9; minimum daily wages, $2.00.

Journeymen Barbers' International Union, No. 564. Secretary, George L. Cleaveland, Skowhegan; date of organization, July 25, 1905; has trade agreement with employers, indefinite as to time; number of members, 12; qualifications for membership, three years' apprenticeship; initiation fee, $3.00; month-

ly dues, 60 cents; times of meeting, first and third Tuesdays in each month; sick benefit, $5.00 per week; death benefit, $60.00 to $500; hours of labor, 67 per week; minimum daily wages, $2.00.

Laborers' Protective Union, No. 10,191. Secretary, Wilbur G. Hapgood, 28 Mechanic street, Skowhegan; date of organization, September 2, 1902; has no trade agreement with employers; number of members, 50; initiation fee, $1.00; monthly dues, 20 cents; times of meeting, alternate Friday evenings; hours of labor, 9; minimum daily wages, $1.50.

United Brotherhood of Carpenters and Joiners of America, No. 787. Secretary, Guerdon W. Yale, 251 Madison avenue, Skowhegan; date of organization, April 23, 1901; has no trade agreement with employers; number of members, 65; initiation fee, $5.00; monthly dues, 50 cents; times of meeting, second and fourth Thursdays in each month; hours of labor, 8; minimum daily wages, $2.50.

United Textile Workers of America. Secretary, W. J. Lashon; 29 Milburn street, Skowhegan; date of organization, August 6, 1904; has no trade agreement with employers; number of members, 60; initiation fee, 75 cents; monthly dues, 25 cents; times of meeting, second and fourth Wednesdays in each month; hours of labor, 10; minimum daily wages, $2.00.

Solon.

Pulp, Sulphite and Papermill Workers' Union, No. 53. Secretary, Walter W. Knowles, Box 213, Solon; date of organization, July 28, 1904; has no trade agreement with employers; number of members, 65; initiation fee, $2.00; monthly dues, 40 cents; times of meeting, every Wednesday evening; hours of labor, 10 by day, 13 by night; minimum daily wages, $1.50 and $1.80.

South Thomaston (Spruce Head).

Granite Cutters' International Association of America, Spruce Head Branch. Secretary, A. Caddy, Spruce Head; date of organization, March 10, 1877; has trade agreement with employers which expires March 1, 1908; number of members, 48; initiation fee, $3.00; monthly dues, $1.00; times of meeting, monthly; death benefit, $225; hours of labor, 8; minimum daily wages, $3.00.

Stockton Springs.

International Brotherhood of Maintenance of Way Employes, Stockton Lodge. Secretary, John Flinton, Searsport.

Stonington.

Granite Cutters' International Association of America, Stonington Branch. Secretary, W. J. Richards, Box 244, Stonington; date of organization, March 10, 1877; has trade agreement with employers which expires May 1, 1909; number of members, 200; qualifications for membership, three years' apprenticeship; initiation fee, $3.00 to $75.00; monthly dues, $1.00; times of meeting, monthly; strike benefit, $1.00 per day; death benefit, $50.00 to $200; hours of labor, 8; minimum daily wages, $3.00.

Lobster Fishermen's Union. No return.

Paving Cutters' Union of United States and Canada, No. 12. Secretary, John Dyer, Stonington; date of organization, April 21, 1902; has trade agreement with employers which expires May 1, 1907; number of members, 52; qualifications for membership, practical workmanship; initiation fee, $1.30; monthly dues, 30 cents; times of meeting, third Friday in each month; death benefit, $75.00; hours of labor, 8; minimum daily wages, $2.00.

Quarryworkers' International Union of North America, No. 74. Secretary, Andrew Stinson, Stonington; date of organization, April 27, 1905; has trade agreement with employers which expires May, 1909; number of members, 500; initiation fee, $1.00; monthly dues, 50 cents; times of meeting, monthly; death benefit, $50.00; hours of labor, 8; minimum daily wages, $1.80.

Stonington (Oceanville).

Lobster Fishermen's Union. Secretary, E. S. Hatch, Oceanville; date of organization, May 26, 1905; number of members, 30; initiation fee, $2.25; monthly dues, 25 cents; times of meeting, twice a month; no benefits.

Sullivan (North).

Granite Cutters' International Association of America, North Sullivan Branch. Secretary, Pearl Tripp, North Sullivan; date

of organization, February, 1900; has trade agreement with employers which expires May 1, 1907; number of members, 50; qualifications for membership, must be a practical granite cutter; initiation fee, $3.00 to $25.00; monthly dues, $1.00; times of meeting, third Saturday evening in each month; death benefit, $50.00 to $200; hours of labor, 8; minimum daily wages, $3.00.

Quarryworkers' International Union of North America, Branch No. 52. Secretary, Zemro S. Hall, North Sullivan; date of organization, April 1, 1904; has trade agreement with employers which expires May 1, 1909; number of members, 60; qualifications for membership, must be a competent quarryman; initiation fee, $1.00; monthly dues, 50 cents; times of meeting, third Monday in each month; death benefit, $50.00; hours of labor, 8; minimum daily wages, $1.75.

Vinalhaven.

Granite Cutters' International Association of America. Secretary, Henry E. Wilson, Vinalhaven; date of organization, March 14, 1877; has trade agreement with employers which expires May 1, 1908; number of members, 100; qualifications for membership, must be a journeyman granite cutter; initiation fee, apprentices $3.00, others $25.00; monthly dues, $1.00; times of meeting, monthly; death benefit, $200; any member sixty-two years of age, with a membership of twenty years or more, shall be paid $10.00 a month for six months each year; hours of labor, 8; minimum daily wages, $3.00.

Lobster Fishermen's Union. Secretary, James B. Webster, Vinalhaven; date of organization, April 6, 1905; has trade agreement with dealers which may be terminated by mutual consent; number of members, 165; qualifications for membership, must be a lobster fisherman of good character; initiation fee, $1.00; monthly dues, 30 cents; times of meeting, every Saturday evening.

Paving Cutters' Union of United States and Canada, No. 34. Secretary, Alfred Headley, Vinalhaven; date of organization, May, 1903; has no trade agreement with employers; number of members, 28; initiation fee, $1.00; monthly dues, 30 cents; times of meeting, second Saturday in each month; death benefit, $75.00; hours of labor, 9; minimum daily wages, $2.00.

Quarryworkers' International Union of North America, Branch No. 55. Secretary, George B. Smith, 7 Lake street, Vinalhaven; date of organization, May 1, 1904; has trade agreement with employers which expires in 1908; number of members, 70; qualifications for membership, must be a quarryman; initiation fee, $1.00; monthly dues, 50 cents; times of meeting, third Saturday in each month; death benefit, $50.00; hours of labor, 8; minimum daily wages, $1.80.

Waldoboro.

Granite Cutters' International Association of America. Secretary, L. M. Sartell, Waldoboro; date of organization, reorganized June 6, 1899; has trade agreement with employers which expires March 1, 1908; number of members, 61; qualifications for membership, three years' apprenticeship; initiation fee, $2.00; monthly dues, $1.00; times of meeting, third Friday in each month; death benefit, $200; hours of labor, 8; minimum daily wages, $3.00.

Paving Cutters' Union of United States and Canada. Secretary, Redington Sprague, Waldoboro; date of organization, August 16, 1901; has trade agreement with employers which expires April 1, 1907; number of members, 14; qualifications for membership, must be a paving cutter able to make fair wages; initiation fee, $1.30; monthly dues, 30 cents; times of meeting, twentieth of each month; death benefit, $75.00; hours of labor, 8; minimum daily wages, $2.75.

Quarryworkers' International Union of North America, Waldoboro Branch, No. 9. Secretary, W. F. B. Feyler, Waldoboro; date of organization, October 31, 1903; had trade agreement with employers which expired July 1, 1906; number of members, 67; qualifications for membership, must be over sixteen years of age; initiation fee, $1.00; monthly dues, 50 cents; times of meeting, second Wednesday in each month; death benefit, $50.00; hours of labor, 8; minimum daily wages, $1.61.

Waterville.

Bricklayers, Masons and Plasterers' Union, No. 8. Secretary, Ernest J. Marshall, 17 Brook street, Waterville; date of organization, 1899; has no trade agreement with employers;

number of members, 70; qualifications for membership, competent workmanship; initiation fee, $11.00; monthly dues, 35 cents; times of meeting, first and third Thursdays in each month; accident benefit, $2.00 per week; hours of labor, 8; minimum daily wages, $3.60.

Brotherhood of Railroad Trainmen, Kennebec Lodge, No. 343. Secretary, Thomas W. Lunnie, 17 Brook street, Waterville; date of organization, 1895; has trade agreement with employers which may be terminated on thirty days' notice by either party; number of members, 100; qualifications for membership, one year's train or yard service; initiation fee, $3.00; monthly dues, 50 cents; times of meeting, second and fourth Sundays in each month; death and total disability insurance in three classes; class A, $500, class B, $1,000, class C, $1,350, costing 75 cents, $1.50 and $2.00 per month respectively, total disability being any injury which disables a man so he cannot follow his occupation; hours of labor, 10 on yard, 11 on train; minimum daily wages, $2.00 on yard and train service.

Cigarmakers' International Union of America, No. 376. Secretary, R. J. Sullivan, 39 Main street, Waterville; date of organization, July 26, 1905; has no trade agreement with employers; number of members, 24; qualifications for membership, must be a competent cigarmaker; initiation fee, $3.00; monthly dues, $1.20; times of meeting, first Wednesday in each month; hours of labor, 8; minimum daily wages, $3.20.

Cotton Mule Spinners' Association, Union No. 15. Secretary, Michael J. Leahy, Box 140, Waterville; date of organization, November 10, 1890; has no trade agreement with employers; number of members, 10; qualifications for membership, must be a mule spinner; no initiation fee; monthly dues, 50 cents; times of meeting, alternate Tuesdays; death benefit, $50.00; hours of labor, 10; minimum daily wages, $2.75.

International Association of Carworkers, Pine Tree Lodge, No. 144. Secretary, I. V. Carter, 3 High street, Waterville; date of organization, June, 1903; has no trade agreement with employers; number of members, 25; qualifications for membership, must be a car inspector, engine employe, or worker on air brake; initiation fee, $2.00; monthly dues, 25 cents; times of meeting, twice a month; hours of labor, 9; minimum daily wages, $1.90.

International Association of Machinists. Secretary, C. H. Gibson, Fairfield; date of organization, 1904; has no trade agreement with employers; number of members, 35; qualifications for membership, must be competent to command the standard wages in the locality where he works; initiation fee, $3.00; monthly dues, 75 cents; times of meeting, second and fourth Thursdays in each month; hours of labor, 9; minimum daily wages, $2.30.

International Brotherhood of Blacksmiths and Helpers. Secretary, Verde Vollier, Waterville; date of organization, June 10, 1906; has no trade agreement with employers; number of members, 20; qualifications for membership, must be a competent blacksmith or regular helper; initiation fee, $3.00; monthly dues, 50 cents; times of meeting, first and third Fridays in each month; hours of labor, 9; minimum daily wages, $2.40.

International Typographical Union, No. 643. Secretary, Francis M. Joseph, 15 Ash street, Waterville; date of organization, January 23, 1905; has trade agreement with employers which expires November, 1907; number of members, 14; qualifications for membership, four years' apprenticeship; initiation fee, $2.00; monthly dues, 50 cents; times of meeting, first Monday in each month at 5 P. M.; death benefit, $70.00; hours of labor, 8; minimum weekly wages, $13.50 by day, $18.00 by night.

United Brotherhood of Carpenters and Joiners of America, No. 348. Secretary, A. L. Tripp, 276 Main street, Waterville; date of organization, September 4, 1899; has no trade agreement with employers; number of members, 100; qualifications for membership, must be a competent carpenter, of good character, and between eighteen and fifty years of age; initiation fee, $5.00; monthly dues, 50 cents, and 30 cents for those over fifty years of age; times of meeting, first and third Thursdays in each month; sick benefit, $1.50 to $3.00 per week; death benefit, $200 on death of member, and $50.00 on death of wife; hours of labor, 8; minimum daily wages, $2.50.

Winter Harbor.

Lobster Fishermen's Union, No. 11,899. Secretary, James M. Gerrish, Winter Harbor; date of organization, May 20, 1905; number of members, 30; qualifications for membership, must be a lobster fisherman of good moral character; initiation

fee, $1.00; monthly dues, 25 cents; times of meeting, every Saturday at 7.30 P. M.; no benefits.

UNIONS AND MEMBERSHIP BY TOWNS.

In our investigation for 1906 we find 215 local labor organizations in 54 cities, towns and plantations, ranging from 1 to 31 unions in a town. Fourteen unions known to exist have failed to report, and 5 others that have sent in returns failed to report their membership. This leaves 196 unions reporting membership amounting to 14,772. The result of our investigation last year showed 212 unions in the State of which number 194 reported a membership of 13,798. This shows a gain of 3 unions, and a gain in indicated membership of 974. Twenty-seven new unions not shown last year have sent in returns, and 24 are reported disbanded within the year.

The present number of unions in each town, including those not reporting, together with the combined membership of those reporting membership, is as follows:

Addison, 1 union with 45 members.

Ashland, 1 union with 52 members.

Auburn, 3 unions with 481 members.

Augusta, 13 unions with 452 members, including 1 not reporting membership.

Baileyville, 1 union with 35 members.

Bangor, 19 unions with 804 members, including 5 not reporting and 1 not reporting membership.

Belfast, 1 union with 221 members.

Biddeford, 6 unions with 293 members.

Bluehill, 2 unions with 111 members.

Brewer, 3 unions with 276 members.

Brownville, 3 unions with 77 members, including 1 not reporting.

Brunswick, 2 unions with 53 members.

Calais, 2 unions with 50 members, including 1 not reporting.

Caribou, 1 union not reporting membership.

Cushing, 1 union with 20 members.

Deer Isle, 1 union with 34 members.

East Livermore, 2 unions with 258 members.

Eden, 5 unions with 453 members.

Frankfort, 3 unions with 371 members.

Franklin, 1 union with 25 members.
Fryeburg, 1 union with 16 members.
Gardiner, 4 unions with 91 members.
Hallowell, 5 unions with 395 members.
Houlton, 4 unions with 50 members, including 3 not reporting.
Hurricane Isle, 3 unions with 171 members.
Isle au Haut, 1 union with 28 members.
Jay, 3 unions with 235 members, including 1 not reporting.
Jonesport, 2 unions with 31 members, including 1 not reporting.
Lewiston, 10 unions with 721 members, including 1 not reporting.
Lisbon, 3 unions with 131 members.
Long Island plantation, 1 union with 17 members.
Madison, 6 unions with 462 members.
Matinicus Isle plantation, 1 union not reporting.
Milbridge, 1 union with 32 members.
Millinocket, 12 unions with 679 members.
Milo, 1 union with 60 members.
Mount Desert, 3 unions with 197 members.
Old Town, 1 union with 21 members.
Orono, 2 unions with 56 members.
Portland, 31 unions with 3,727 members, including 1 not reporting membership.
Rockland, 5 unions with 120 members.
Rumford, 5 unions with 778 members.
Saco, 1 union with 125 members.
Saint George, 4 unions with 151 members.
Skowhegan, 6 unions with 214 members.
Solon, 1 union with 65 members.
South Thomaston, 1 union with 48 members.
Stockton Springs, 1 union not reporting membership.
Stonington, 5 unions with 782 members, including 1 not reporting.
Sullivan, 2 unions with 110 members.
Vinalhaven, 4 unions with 363 members.
Waldoboro, 3 unions with 142 members.
Waterville, 9 unions with 398 members.
Winter Harbor, 1 union with 30 members.

LOCATIONS OF UNIONS, MEMBERSHIP, HOURS OF LABOR AND MINIMUM WAGES.

The Atlantic coast seamen have branches in Bangor and Portland. Local membership cannot be stated. Total membership of the order for the whole Atlantic coast, 3,500. Minimum daily wages, $1.00 and board.

The bakery and confectionery workers have a union in Portland with 40 members. They work 10 hours by day and 9 by night, with a minimum weekly wage of $13.00.

The barbers have unions in Augusta, Bangor, Lewiston, Portland, Rockland and Skowhegan, with a membership, outside of Bangor, of 123. They work from 11 to 14 hours per day, with a minimum daily wage from $1.50 to $2.00.

The blacksmiths have unions in Biddeford, Portland and Waterville, with a membership of 72. They work from 9 to 10 hours per day, with a minimum daily wage from $1.40 to $2.40.

The boilermakers and iron shipbuilders have a union in Portland with 50 members. They work 10 hours per day, with a minimum daily wage of $1.50.

The boot and shoeworkers have unions in Auburn (3), Belfast and Hallowell (2), with a membership of 765. They work from 9 to 10 hours per day, with a minimum daily wage from $1.00 to $2.00.

The bricklayers, masons and plasterers have unions in Augusta, Bangor, Biddeford, Brunswick, Calais, Eden (Bar Harbor), Gardiner, Lewiston, Old Town, Portland, Rumford (Falls), Skowhegan and Waterville, with a membership of 673. They work from 8 to 9 hours per day, with a minimum daily wage from $2.50 to $3.60.

The bridge builders have a union in Portland with 35 members. They work 10 hours per day, with a minimum daily wage of $2.00.

The building laborers have a union in Bangor with 39 members. They work 8 hours per day, with a minimum daily wage of $2.10.

The carpenters have unions in Augusta, Bangor, Biddeford, Eden (Bar Harbor), Lewiston, Madison, Millinocket, Portland, Rumford (Falls), Skowhegan and Waterville, with a member-

ship of 1,361. They work from 8 to 10 hours per day, with a minimum daily wage from $2.00 to $2.75.

The carworkers have unions in Portland and Waterville, with a membership of 98. They work from 9 to 9½ hours per day, with a minimum daily wage of $1.90.

The cigarmakers have unions in Bangor, Biddeford, Lewiston, Portland, Rockland and Waterville, with a membership of 183. They work 8 hours per day, with a minimum daily wage from $2.00 to $3.25.

The coal drivers have a union in Portland with 90 members. They work 10 hours per day, with a minimum daily wage of $1.50.

The cotton mule spinners have unions in Augusta, Brunswick, Lewiston and Waterville, with a membership of 168. They work 10 hours per day, with a minimum daily wage from $1.75 to $2.75.

The electrical workers have unions in Millinocket and Portland, with a membership of 53. They work from 8 to 9 hours per day, with a minimum daily wage from $2.00 to $2.50.

There are federal labor unions in Augusta, Bangor, Eden (Bar Harbor), Gardiner, Hallowell and Madison, with a membership, outside of Augusta, of 416. The members work from 8 to 10 hours per day, with a minimum daily wage from $1.75 to $4.00.

There is a federal trades union in Millinocket with 35 members. They work 9 hours per day, with a minimum daily wage from $1.75 to $3.50.

The foundry workers have a union in Bangor, from which no return has been received.

The granite cutters have unions in Bluehill, Frankfort, Franklin, Hallowell, Hurricane Isle, Jay (North), Lewiston, Mount Desert (Hall Quarry), Portland, Saint George (Clark Island), South Thomaston (Spruce Head), Stonington, Sullivan (North), Vinalhaven and Waldoboro, with a membership of 1,366. They work 8 hours per day, with a minimum daily wage of $3.00.

The hodcarriers and building laborers have a union in Portland with 125 members. They work 8 hours per day, with a minimum daily wage of $2.25.

The iron moulders have unions in Bangor, Biddeford, Lewiston and Portland, with a membership, outside of Lewiston, of

225. They work 9 hours per day, with a minimum daily wage from $2.50 to $2.75.

There is a laborers' protective union in Skowhegan with 50 members. They work 9 hours per day, with a minimum daily wage of $1.50.

The leather workers on horse goods have a union in Portland with 12 members. They work 54 hours per week from June to September inclusive, and 59 hours the rest of the year, with a minimum weekly wage of $10.00.

The limetrimmers have a union in Rockland with 22 members. They work 10 hours per day, with a minimum daily wage of $1.75.

The limeworkers have a union in Rockland with 26 members. They work 12 hours per day, with a minimum daily wage of $1.87½.

The lobster fishermen have unions in Addison (Seaside), Cushing (Port Clyde), Deer Isle (Sunshine), Isle au Haut, Jonesport, Jonesport (Beals), Matinicus Isle plantation, Milbridge, Saint George (Spruce Head), Stonington, Stonington (Oceanville), Vinalhaven and Winter Harbor, with a membership, outside of Jonesport (Beals), Matinicus Isle plantation and Stonington, of 475.

The locomotive engineers have unions in Bangor, Brownville (Henderson), Houlton and Portland, with a membership, outside of Houlton, of 348. Their hours of labor vary, the maximum day being from 10 to 11 hours, with a minimum daily wage from $3.00 to $4.00.

The locomotive firemen have unions in Brownville (Henderson), Houlton and Portland, with a membership, outside of Houlton, of 193. Their hours of labor vary, the maximum day being from 10 to 11 hours, with a minimum daily wage from $1.95 to $2.15.

The longshore carpenters have a union in Portland with 150 members. Their hours of labor are not limited. Their minimum wage is 30 cents per hour.

The longshoremen have unions in Bangor and Portland, with a membership of 625. They work 10 hours per day, with a minimum wage of 30 cents per hour.

The loomfixers have unions in Augusta and Saco, with a membership of 143. They work 10 hours per day, with a minimum daily wage from $1.95 to $2.00.

The machinists have unions in Portland and Waterville, with a membership of 55. They work from 9 to 10 hours per day, with a minimum daily wage from $2.00 to $2.30.

The maintenance of way employes have unions in Ashland, Caribou, Houlton, Millinocket, Milo and Stockton Springs, with a membership, outside of Caribou and Stockton Springs, of 202. They work 10 hours per day, with a minimum daily wage of $1.60.

The moccasin and moccasin slipper workers have a union in Bangor with 45 members. They work 9 hours per day, with a minimum daily wage of $1.80.

The musicians have unions in Lewiston and Portland, with a membership of 308.

The painters, decorators and paperhangers have unions in Augusta, Bangor, Eden (Bar Harbor), Lewiston, Portland and Skowhegan, with a membership of 513. They work from 8 to 9 hours per day, with a minimum daily wage from $2.00 to $2.75.

The paper box, bag and novelty workers have a union in Rumford (Falls) with 225 members. They work 10 hours per day, with a minimum daily wage of $1.16⅔.

The papermakers have unions in Augusta, Baileyville (Woodland), Brewer (South), East Livermore (Livermore Falls), Lisbon (Falls), Madison, Millinocket, Orono and Rumford (Falls), with a membership of 534. They work from 8 to 13 hours per day, with a minimum daily wage from $1.50 to $3.50.

The paving cutters have unions in Frankfort, Hurricane Isle, Mount Desert (Hall Quarry), Saint George (Long Cove), Stonington, Vinalhaven and Waldoboro, with a membership of 224. They work from 8 to 9 hours per day, with a minimum daily wage from $2.00 to $2.75.

The plumbers and steamfitters have unions in Bangor, Eden (Bar Harbor) and Portland, with a membership of 64. They work from 8 to 9 hours per day, with a minimum daily wage from $2.25 to $3.50.

The printers have unions in Augusta, Bangor, Millinocket, Portland and Waterville, with a membership of 164. They work from 8 to 9 hours per day, with a minimum weekly wage from $8.00 to $18.00.

The printing pressmen have a union in Portland with 50 members. They work 9 hours per day, with a minimum daily wage from $1.50 to $3.00.

The pulp, sulphite and papermill workers have unions in Augusta, Brewer (South), East Livermore (Livermore Falls), Gardiner (South), Lisbon (Falls), Madison, Millinocket, Orono, Rumford (Falls) and Solon, with a membership of 1,399. They work from 8 to 13 hours per day, with a minimum daily wage from $1.50 to $2.75.

The quarryworkers have unions in Bluehill, Calais (Red Beach), Frankfort, Fryeburg, Hallowell, Hurricane Isle, Jay (North), Long Island plantation, Mount Desert (Hall Quarry), Rockland, Saint George (Clark Island), Stonington, Sullivan (North), Vinalhaven and Waldoboro, with a membership of 1,358. They work from 8 to 10 hours per day, with a minimum daily wage from $1.50 to $2.00.

The railroad telegraphers have unions in Bangor and Portland, with a membership, outside of Bangor, of 124. They work 11 hours per day, with a minimum monthly wage of $47.50.

The railroad trainmen have unions in Bangor, Brownville (Henderson), Calais, Houlton, Portland and Waterville, with a membership, outside of Bangor, Brownville (Henderson) and Houlton, of 582. They work from 10 to 12 hours per day, with a minimum daily wage from $1.75 to $2.00.

The railway conductors have unions in Bangor and Portland, with a membership, outside of Bangor, of 138. They work on a basis of 10 hours per day.

The retail clerks have unions in Augusta, Biddeford, Millinocket and Portland, with a membership of 113. They work from 8 to 12 hours per day, with a minimum daily wage varying from 83 cents to $3.25.

The ringspinners have a union in Augusta with 92 members. They work 10 hours per day, with no fixed minimum wages.

The sawmill workers and woodsmen have unions in Brewer (South) and Millinocket, with a membership of 182. They work from 9 to 10 hours per day, with a minimum daily wage from $1.50 to $2.00.

The shirt, waist and laundry workers have unions in Lewiston and Millinocket, with a membership of 37. They work 9

hours per day, with a minimum daily wage from $1.00 to $2.50.

The stationary firemen have unions in Gardiner, Jay (Chisholm), Lisbon (Falls), Madison and Millinocket, with a membership, outside of Jay (Chisholm), of 130. They work from 8 to 13 hours per day, with a minimum daily wage from $1.60 to $2.50.

The suspender workers have a union in Augusta with 8 members. They work 8 hours per day, with a minimum daily wage of $1.50.

The teamsters have unions in Bangor, Millinocket and Portland, with a membership of 129. They work 10 hours per day, with a minimum daily wage of $2.00.

The textile workers have unions in Madison and Skowhegan, with a membership of 135. They work 10 hours per day, with a minimum daily wage from $1.50 to $2.00.

RESULTS OF ORGANIZATION.

Replies to the question "What have you accomplished for labor by organization" take quite a wide range, but a majority of them assert that higher wages and shorter hours have been gained. A study of these replies shows conclusively that well organized trades have received much more in the way of benefits than those poorly organized. The prosperous times and consequent increased demand for labor in recent years has no doubt had a tendency to an increase in wages and other concessions to labor, yet through labor organizations much more has been accomplished in this direction than would have been voluntarily offered.

In a few of the trades it is claimed that organization has produced no good results; in others, that the principal accomplishment lies in the moral force of the organized union in preventing the reduction of wages. Some lay great stress on the social and fraternal benefits of organization, while others see in the insurance benefits the leading value of labor unions. Several secretaries refer to the efforts of organized labor in bringing about the fortnightly payment law, and others to the increased compensation for overtime, holidays and Sundays. On the whole there can be no doubt that many reforms, both material and social, as well as improved working conditions, have been brought about through the united efforts of organized labor.

DISCRIMINATIONS AGAINST NON-UNION MEN.

Returns from 190 unions answered the question "Do non-union men enjoy the same conditions as to labor, wages and steady employment, as union men?" This refers to non-union men, within the jurisdiction of the union, in the same trade or calling as the men composing the union making the return. Answers from 89 unions indicate that non-union men enjoy equal conditions with union men, and from 101 that they do not.

Answers to the question are here given in detail, classified by trades or callings, and arranged alphabetically. The answer "yes" indicates that non-union men enjoy equal privileges with union men, and "no" that they do not.

Atlantic coast seamen, no, 2.
Bakers, yes, 1.
Barbers, yes, 2; no, 3.
Blacksmiths, yes, 3.
Boot and shoe workers, yes, 4; no, 2.
Bricklayers, masons and plasterers, yes, 5; no, 8.
Building laborers, no, 1.
Carpenters and joiners, yes, 15; no, 6.
Carworkers, yes, 2.
Cigarmakers, no, 6.
Coal drivers, no, 1.
Cotton mulespinners, yes, 2; no, 1.
Electrical workers, yes, 1; no, 1.
Federal labor, yes, 2; no, 4.
Federal trades, no, 1.
Granite cutters, no, 15.
Hodcarriers, no, 1.
Iron moulders, no, 3.
Laborers' protective, yes, 1.
Leather workers on horse goods, yes, 1.
Limetrimmers, yes, 1.
Limeworkers, yes, 1.
Lobster fishermen, yes, 4; no, 2.
Locomotive engineers, yes, 2; no, 1.
Locomotive firemen, yes, 1.
Longshoremen, no, 2.
Loomfixers, yes, 2.
Machinists, yes, 2.

Maintenance of way employes, yes, 3.
Moccasin and moccasin slipper workers, yes, 1.
Musicians, no, 2.
Painters, decorators and paperhangers, yes, 3; no, 2.
Papermakers, yes, 5; no, 4.
Paving cutters, yes, 3; no, 4.
Plumbers, yes, 2; no, 1.
Printers, yes, 2; no, 3.
Printing pressmen, no, 1.
Pulp, sulphite and papermill workers, yes, 8; no, 2.
Quarryworkers, yes, 1; no, 14.
Railroad trainmen, yes, 3.
Railway conductors, yes, 1.
Retail clerks, yes, 1.
Sawmill workers and woodsmen, yes, 1; no, 1.
Shirt, waist and laundry workers, no, 2.
Stationary firemen, no, 4.
Suspender workers, no, 1.
Teamsters, yes, 2; no, 1.
Textile workers, yes, 1; no, 1.

THE APPRENTICE SYSTEM.

The apprentice system of trades unions has been made a subject of much discussion of late as is evidenced by the constantly increasing number of queries that have come to the Bureau of Labor from both employers and employes. That the subject is one in which a widespread interest is felt is shown by the letters received from time to time from other states, asking information regarding the working of the system in Maine.

Many articles, pro and con, have been written on this subject which, however, is far from exhausted. Different conditions of course make it very difficult to treat this broad topic in a general way that will be applicable everywhere, but the course of inquiry pursued by us, during which we have inquired into the workings of the system in all the trades in which it is in vogue, enable us to make a few statements which we feel will be substantiated by all who have taken the trouble to investigate this subject to any degee.

Some writers have made the statement that the labor unions are restricting the apprentices to such an extent that the whole

system is necessarily going out of use. This allegation is denied by the unions. They claim that any restrictions that there may be must be attributed to changed conditions; that there is nothing in their laws to prevent the apprentice from receiving all the advantages that have been his in the past and that, in fact, their laws are so framed as to encourage the system in every possible way.

One and all, however, agree that the apprentice system is fast going out of existence and those who make a study of labor conditions are wondering what manner of workman the present conditions will produce. Such being the general condition it was deemed well to make an investigation of the apprentice system in Maine and, in accordance with this purpose, questions were inserted in the blank return and sent to all the unions in the State.

The first lesson learned from the statistics gathered is that the international unions leave the matter altogether with the local unions. So in all cases, so far as we can learn, the local unions have the power to restrict the number of apprentices as they may see fit in accordance with any agreement they may have with the employer.

The statistics show that but fifteen trades have any semblance of a recognized apprentice system, and they constitute but a small proportion of the local unions of the State. Even in most of the trades where the system is in vogue it is ineffective and unsatisfactory.

The trades that appear to have the most uniform system and that are obtaining the best results are those of the granite cutters and quarry workers. It is of course necessary that there shall be some limit to the number of apprentices that may be taken on by any one contractor. The returns show that these unions attempt to regulate this by limiting the number of apprentices to the number of men employed, the contractor being allowed an apprentice for every two, four, six, eight or fourteen men employed, according to the rules of the local union.

This plan is not altogether successful, owing to the different conditions that may exist. Take, for example, the building trades, in which the volume of business fluctuates with the different seasons of the year. Thus, when a contractor has a large crew of men at work, he can properly increase the number

of apprentices and agree that they shall have an opportunity to learn the trade. Suddenly the work is at an end and the contractor cannot use the apprentices longer, save at a financial loss to himself. The union cannot expect the contractor to suffer such loss and thus cannot reasonably ask that the apprentices be longer retained.

When the busy season comes once more the apprentices have found employment elsewhere and the contractor is importuned for employment by a new set. Under these conditions it is not strange that contractors who, of course, aim to have their work done quickly and well, are not anxious to take apprentices in hand. As a matter of fact it is usually found that in the instances in which the proportion of the apprentices is determined by the unions, that the employers do not take on the full number allowed.

In the earlier days, when most of our industries were conducted on a small scale and there was not the sharp competition of the present day, with the imperative necessity of getting the work out of the shop with rapidity, the apprentice system worked to the satisfaction of all. Now, however, there seems no particular call for the apprentice on the part of the employer, making it difficult for the young man to get an opportunity to learn a trade.

With the growth of modern industry has come the multifold machinery and this has also had its effect upon the apprentice system, for it has brought about specialization. Thus one boy learns to make one part of a product, another a second part, until we have a manufactured article in whose production possibly a dozen workmen participated and no one of whom could turn out the completed product. Of course skilled men are not being produced by such work.

Union men allege that the desire of a boy to learn a trade is seldom governed by any especial aptitude for the work chosen, but that it is more often influenced by chance or by some special advantage in the way of shorter hours or higher wages afforded by some particular trade. They also claim that if the followers of these trades neglect to protect their interests and not limit the number of apprentices the tendency would be to longer hours and decreased wages and the men who had thoroughly learned that trade would then find themselves but little better off than

the unskilled workmen. The skilled workman must be protected for the general good of the community and it is equally important that the apprentice should be protected in order that he may become capable of protecting and caring for the family which will probably be dependent upon him. He must not, however, be protected at the expense of the man and if the latter finds himself unable to make proper headway, because of the improper workings of child labor or apprentice labor, then the system defeats itself.

As a result of the conditions that weaken the apprentice system of today, the greater number of young men receive little training in the calling which they have expressed a desire to follow, and consequently the unionists see their trades crowded with boys who, as poor workmen, are carried into the industry largely at the expense of the skilled workmen.

With the present system unsatisfactory to the contractor, the general public, the apprentice and the skilled workman, it is a natural consequence that the unions should be, as they now are, attempting to formulate a new system that will afford a practical solution of this very important question.

The following facts have been compiled from the returns and they go to show, in detail, the present condition of the apprenticeship system or lack of system, among the labor unions of the State.

The Atlantic coast seamen have no apprentice system. They have petitioned Congress to enact a law compelling shipmasters to carry apprentices, but so far without results.

The bakery and confectionery workers require all apprentices to work three years at any branch of the trade and then pass an examination by a committee before becoming eligible to membership in their order.

The barbers require all apprentices to be registered on the books of the union and a record kept until the expiration of three years. Some unions allow only one apprentice in a shop, while others allow one to every three journeymen.

The blacksmiths do not indicate that they have any system of apprenticeship.

The boot and shoe workers, on account of the nature of their work, do not require apprentices. Each new workman learns his particular part of the trade in a few weeks.

Some of the bricklayers, masons and plasterers' unions have rules in regard to apprentices, and some have not. The usual rule is that indenture papers shall be signed, the employer on his part agreeing to give employment to the apprentice during the working season at a fixed scale of wages for each year, and to carefully instruct him in the trade; and the apprentice, on his part, agreeing to remain three years and to strive faithfully to gain insight into the work. Some unions allow one apprentice to six journeymen, while others only allow one to every ten. The son of a member may work with his father without being indentured to the trade.

The bridge builders' return does not mention the matter of apprentices, neither does that of the building laborers.

But few of the carpenters' unions have any rules in regard to the employment of apprentices, except what relates to eligibility to membership in their unions. Some unions allow one boy to a shop and one additional for every six or ten journeymen. The usual time that an apprentice is required to work at the trade before being admitted to all the privileges of membership, is three years.

The carworkers have no system of apprenticeship.

Most of the cigarmakers' unions have rules governing apprentices but they vary in regard to the number allowed in proportion to the number of journeymen. One union allows one in a shop, and two where ten journeymen are employed, but never more than two. Another allows one to a shop, two where fifteen journeymen are employed, and three where there are twenty-five journeymen, but never more than three; while a third union allows one at any shop, two where five journeymen are employed, and three where there are ten, but never more than three. The time of service, three years, is uniform throughout all the unions.

The coal drivers, from the nature of their business, have no apprentice system.

Although the trade of cotton mule spinning is quite difficult to learn, the cotton mule spinners have no apprentice system or rules governing the matter. In practice an adult never learns the trade, but their ranks are recruited from those who commence young as backboys and gradually learn from observation.

The electrical workers require a three-years' apprenticeship before allowing a man to take charge of a job.

The federal labor unions have no need of an apprentice system, and the return from the federal trades' union makes no mention of the matter.

Most of the granite cutters' unions have rules governing apprentices but they vary considerably. The time of service required is fixed at 900 days for granite cutters and 600 for tool sharpeners. The compensation is generally $1.00 per day for beginners, to $2.00 per day the last year, a raise in pay generally being given each year, but in some cases the raise comes every nine months. The number of apprentices allowed to a gang of twelve to fourteen journeymen varies from one to three.

The hodcarriers make no mention of the matter of apprentices.

One of the iron moulders' unions requires that apprentices shall serve four years, and not over three months on any one job.

Neither the laborers' protective union nor the leather workers on horse goods have any apprentice system. The same is true of the limetrimmers, limeworkers and lobster fishermen's unions.

The only rule noted on returns from locomotive engineers' unions is that a man must work one year at the junior rate of wages. Engineers usually work up from locomotive firemen who have no rules relating to apprentices.

Longshoremen have no need of an apprentice system.

The loomfixers' unions require a three months' apprenticeship and the payment of from $5.00 to $50.00 into the union treasury. There is no limit to the number of apprentices allowed.

The unions of machinists, maintenance of way employes, moccasin and moccasin slipper workers, and musicians, are all without any system of apprenticeship.

The painters have a rule that a man must work at least three seasons on a working card issued by the union before becoming eligible to membership, but he must remain an apprentice until he can command the standard wage. The number allowed is usually one to every four journeymen.

The paper box, bag and novelty workers' union has no apprenticeship rules.

Only one of the papermakers' unions in the State has any requirements in regard to apprentices. There a man must work up through the grades of fourth hand, third hand, second hand, and machine tender.

Most of the paving cutters' unions have an apprenticeship system. One apprentice is allowed to every twelve journeymen, and he must serve two years before another can be taken on in his place.

None of the plumbers' unions in the State claim to have any rules in regard to apprentices.

The rules of the printers' unions vary as to the number of apprentices allowed. Some allow two to each foreman, and others allow one to each five journeymen.

The unions of the printing pressmen, pulp, sulphite and paper-mill workers, quarrymen, railroad trainmen, railway conductors, retail clerks, ringspinners, sawmill employes and woodsmen, shirt, waist and laundry workers, stationary firemen, suspender workers, teamsters and textile workers, are all without any apprentice system.

REQUESTS, DIFFERENCES AND STRIKES.

After a thorough and comprehensive study of the difficulties between employers and employes that have arisen in Maine during the last year, and a comparison of the same with the troubles of the past in this State, and of the present year in other states, it is a cause for considerable gratification to be enabled to state that the number and magnitude of strikes are growing less in Maine each year and that this State has a very clean record when compared with other states of equal manufacturing importance.

The cause for this improved condition is not far to seek, nor is it to be found in any decline in the labor unions, as the statistics of the year show that they are increasing rather than the contrary. It is, however, to be discovered in the more amicable relations maintained between the employers and the employes. Each have discovered that a resort to extreme measures is injurious to all, and each has shown an earnest desire to adjust the small differences that are certain to arise, before they have proceeded so far that a strike is inevitable.

Experience has taught that a little forbearance on each side will bring beneficial results, and all concerned have displayed a most commendable desire to consider the matters at issue judicially and in a spirit of equity so that, in most instances, arbitration has prevented strikes or lockouts. Investigation

discloses that in almost every instance the past year when men have gone on strike this result has come about owing to a refusal, from one side or the other, to meet a committee from the other body. While naturally there have been quite a number of labor difficulties in Maine the past year, the great majority of them have been of a very mild nature and quickly adjusted without strikes.

Prominent among the differences that have led to strikes the past twelve months were those of the mule spinners of Augusta, the shoeworkers of Lewiston and Auburn, the bakers of Portland, the mechanics in the Oxford paper mills at Rumford Falls, and the difficulty that attracted considerable attention by reason of the fact that nearly all of the strikers were girls, that of the paper bag mill workers at Rumford Falls.

A detailed account is subjoined of all matters relating to strikes, lockouts, and other difficulties in Maine that have come to the knowledge of this department during the past year, arranged alphabetically by towns.

Addison.

The lobster fishermen demanded 20 cents each for lobsters, and dealers offered 15 cents. After a few weeks the matter was compromised at 18 cents. This arrangement covered practically all the lobster fishermen's unions along the coast.

Auburn.

Late in December, 1905, forty shoe cutters in one factory presented a demand for increase of wages which was refused and the men went out on strike. Some other workmen went out in sympathy, but the strike was not extensive and lasted only two weeks. The matter was adjusted, the cutters receiving an increase approximating their demand.

Augusta.

A committee of loomfixers was sent to the agent of the Edwards Manufacturing Company asking for an increase in wages. The committee was kindly received and shown by the books of the company that their margin of profit would not admit of an increase at that time, and so the matter was dropped.

July 29, 1906, about forty mule spinners and about an equal number of doffers and back boys walked out of the Edwards cotton mills at Augusta in a body, the cause of the strike being the discharge of one of their number because, according to the belief of the mule spinners, he had been zealous and successful in the affairs of the mule spinners' union. The company denied having taken the action for any such reason and claimed that the man was discharged for other good and sufficient causes, one of which was that the man was incompetent. The employe in question had been working for the company for more than twenty years.

Negotiations for an advance in wages had been pending at the mills for a considerable time, the operatives asking for Fall River prices. The man discharged had previously been sent as a delegate representing the operatives, to a meeting of the directors of the company in Boston, where the delegate was informed that the advance had been conceded and notices of a general advance were that day posted in the mill, the exact amount not being stated. However, when the delegate reported for work he was discharged.

When the man was sent out every member of his union, together with the back boys and doffers, in all about 85, walked out with him. The union called in the president of the United Textile Workers, Mr. John Golden of Fall River, Samuel Ross, secretary, and Thomas O'Donnell, treasurer of the Mule-Spinners' National Union, and representatives of the Central Labor Union of Augusta, Hallowell and Gardiner, who conferred with the company and tried to adjust the differences.

On July 31st the ring spinners, numbering 106, being informed of the exact amount of advance granted them and not being satisfied with it, although not organized joined the strikers and were immediately organized under a charter from the National Union of their craft.

Two days later all other employes were locked out and the mill closed.

A proposition to submit to a board of arbitration to be mutually selected was accepted by a unanimous vote of the unions, but rejected by the company.

For nearly a month all efforts to settle the differences failed, until many of the employes had left the city and obtained

employment in other places, when the man who had been discharged withdrew his claim for reinstatement and thus that question was taken entirely from the controversy. The company then agreed to an adjustment of prices on the Fall River basis and the mill reopened August 27th.

Belfast.

The boot and shoe workers have had a few minor difficulties settled by the local executive board or smoothed over by advice from headquarters, and one matter, relating to rate of wages, was settled by a board of arbitration.

Bluehill.

The granite cutters and the granite contractors have mutually signed an agreement covering all their differences, to be in effect until March 1, 1911.

Calais.

Some of the bricklayers of Calais, while at work on the new pulp mill in Baileyville, went out on strike for an increase in wages from 40 cents per hour to 55 cents. After being out one week the increase was granted. The trouble grew out of the fact that bricklayers brought from Boston were receiving a much higher rate than those from Calais.

The railway trainmen have negotiated a satisfactory agreement with the railroad company, resulting in an improved schedule of wages and material benefits in other directions.

East Livermore.

The papermakers have been agitating for some time the question of changing from the two-tour system to the three-tour system and recently the matter has been adjusted, thus putting the tour workers on 8-hour shifts instead of 11 and 13 hours.

Hallowell.

The quarrymen made a demand for increase of wages, and a strike of about three weeks' duration was the result. The matter was adjusted by granting an increase of 17½ cents per day.

Hurricane Isle.

The paving cutters went out on strike to enforce a demand for a bill of prices, as no bill was signed in 1905. After being out one week the bill was signed.

Lewiston.

The paperhangers asked for and received an increase of wages, but the amount was not stated.

The mule spinners asked for and received an increase of wages, but the amount was not reported.

The shirt, waist and laundry workers went out on strike against a reduction of wages. The matter was adjusted within a week, favorable to the strikers.

Lisbon.

The stationary firemen at Lisbon Falls asked for an increase of wages which was granted.

The papermill workers made a demand for a 10 per cent increase in wages which was granted September first.

Madison.

The stationary firemen drew up a new agreement in place of the old one which expired July 15th and presented it to the company about the time their return was sent in, and the prospect then was that it would be signed without any serious trouble.

Early in the year the textile workers went out on strike for increase in wages, remaining out one week. The matter was adjusted by granting the increase.

Millinocket.

The stationary firemen had a slight agitation with their employers, the nature of which does not appear. It was settled by a compromise.

Milo.

The maintenance of way employes have adjusted, satisfactorily to both sides, some minor disputes in regard to rules of work and payment of wages.

Mount Desert.

The quarryworkers at Hall Quarry had a little dispute over the rate of wages, and the International secretary-treasurer was called into the case. The matter was satisfactorily settled without difficulty.

Orono.

The matter of a demand by the papermill workers for an advance in wages of 10 cents per day is still pending.

Portland.

The bakers made a demand on their employers to sign an agreement to make all bakeries and confectionery manufactories in the city union shops. This the employers refused to do, but increased wages $1.00 on a week. The union workmen went out on strike but no settlement of the demand has been made and the business is still running on the open shop plan.

About the time the bridge builders' union was formed a contractor notified his crew that if any of them joined the union they would lose their job. Thirteen men joined and the result was a lockout. The contractor refused to meet a committee of the central labor union and at the time of making the return the men were still out.

The iron moulders asked for a 9-hour day and an increase of 25 cents in minimum daily wages, which was granted without friction.

The railway conductors met their employers and harmoniously arranged their new annual schedules.

Rockland.

The quarryworkers made a request for a 9-hour day and recognition of the union and sent a committee to confer with the officials of the company for which they worked. The committee was informed that, on account of the condition of the lime business, the reduction in time could not be made, and that no discrimination would be made between union and non-union men. The matter was not pressed.

Rumford.

The bricklayers and masons at Rumford Falls got a reduction from 9 hours to 8 without friction.

Late in August the paperbag makers went out on strike to enforce a demand for an increase in wages of 25 cents per day. So large a contingent going out necessarily obliged the mill to shut down. The strike lasted about three weeks, with a loss in wages, to employes, of about $30,000. The girls finally went back on the offer of the company, which was a slight increase over former wages.

The papermill workers have held a conference with the officials of the company for which they work and mutually arranged for an 8-hour day for day work and that all future difficulties shall be submitted to a conference of interested parties, with no cessation of work pending settlement.

About the middle of September the mechanics employed in the Oxford paper mill, consisting of pipers, machinists, millwrights and carpenters, to the number of 48, went out on strike to enforce a demand for a 9-hour day. After remaining out two days they returned to work without change of conditions.

Skowhegan.

The laborers on highways had a controversy with the road commissioners and selectmen in regard to an increase in wages. Wages were raised from $1.50 to $1.75 per day.

Stonington.

In September the quarryworkers were on strike two days to enforce a demand for an 8-hour day. The same was granted to take effect in November.

Sullivan.

The quarryworkers at North Sullivan renewed, for a period of three years, their trade agreement with their employers, on May 1, the date of expiration of the old.

Waldoboro.

The paving cutters got a bill of prices signed for one year.

June 30th the quarryworkers went out on strike over the matter of a new bill of prices, which lasted three weeks. The matter was settled and the men returned to work July 21st.

Waterville.

The railroad trainmen have had negotiations with their employers resulting in increase of pay in some branches of service, and betterment of working conditions.

MAINE'S NEW SEAPORT, STOCKTON HARBOR.

In the early settlement of Maine the only highways to reach its fertile lands were by sailing vessels and boats. Settlements preceded roads. Study the map of our State and it will be found that every interior settled part, with the exception of Aroostook county, is reached by the rivers emptying into the Atlantic within our own borders, or some of their numerous branches.

The almost impassable barrier of forest beyond Mattawamkeag, a territory for the most part unfit for settlement, delayed for many years the occupation of the rich farming lands in the Meduxnekeag, Aroostook and Saint John valleys, which could be reached by boat only along the Saint John river through British territory.

Outside of the settlements of the Acadian French on the upper Saint John, comparatively few made their homes in this region until the Aroostook war in 1839 brought to our people fuller knowledge of the fertility of this practically unknown section of the State, and although the United States government immediately constructed military roads into that section, but little impetus was given to the settlement of the county until ten or twelve years later, but when once the boom was started its development as a farming section was rapid.

But here the people were isolated. The county was practically a little world by itself. Other sections of the State were always referred to as "outside." It was a six-day trip by rapid stage-coach from Caribou to Bangor and return, and the heavy teams which hauled store supplies occupied over two weeks in making the same journey.

The settlers realized the value of their fertile farms provided they had a market for potatoes, but potatoes had no commercial value for lack of transportation. The county contained 180 townships all heavily timbered and some way of marketing this

forest product was needed, other than the tedious long hauls to landings and expensive drives down hundreds of miles of turbulent streams. The need of a railroad was urgent and when one had been constructed through the extreme length of the county, developing a business far beyond the expectation of its builders, the road was extended to tide-water as a means of handling the freight more expeditiously.

THE BANGOR AND AROOSTOOK RAILROAD.

The agitation of the question of building an "Aroostook Railroad" was commenced prior to the civil war and year after year, in those early days, bills were introduced into the Maine legislature seeking State aid to assist in its construction, but owing to the cost of such a vast undertaking and the long stretch of what is known as waste land to be traversed between the settled portions of Penobscot and Piscataquis counties and the fertile valleys of Aroostook county, these bills were usually referred to the next legislature until, by repeated failures, the advocates of the scheme became discouraged, and although a charter was kept alive for many years by legislative acts extending the time for locating and building, the road, as originally planned, was never built.

The European and North American Railway was chartered August 20, 1850, with the right to build from Bangor to the State line, and later acquired the right to build a branch into Aroostook county. The branch was never built and the main line merely touched the south part of the county of Aroostook at Bancroft. The State assisted in the building of this road to the extent of about 700,000 acres of wild land situated in the northern part of the State, and the road was completed to the State line at Vanceboro in 1871.

In 1870 the New Brunswick Railroad built a branch line into Houlton from Debec Junction, and in 1876 another branch was built through Fort Fairfield to Caribou, and further extended to Presque Isle in 1881. This gave an outlet to Aroostook county, or rather to a small part of it, but freight, in order to reach an American market, had to be hauled by a foreign railroad and through foreign territory.

In 1891 the present Bangor and Aroostook Railroad Company was organized, and in 1893 the road was constructed from

Milo Junction to Houlton; in 1894, from Houlton to Caribou, with a branch to Fort Fairfield; in 1895, from Oakfield Junction to Ashland, also a branch from Patten Junction in Sherman, to Patten; in 1897, from Caribou to Limestone; in 1899, from Caribou to Van Buren; in 1902, from Ashland to Fort Kent, also a two-mile extension northerly from Van Buren; and in 1905, from South Lagrange to Searsport, with a spur track to Cape Jellison bordering Stockton harbor, known as the Northern Seaport Railroad, and was built for the purpose of giving the Bangor and Aroostook road a terminal at a seaport open all the year. The past season a branch road has been constructed from Millinocket to Burnt Land rips, a distance of about 12 miles, known as the Schoodic Railroad. Some of the above named branches were built by companies formed for the purpose of constructing them, but all are leased to the Bangor and Aroostook Railroad. It early acquired by purchase the Bangor and Piscataquis Railroad, and now controls and operates 486.66 miles of road, exclusive of the Schoodic branch.

Prior to the construction of the Seaport branch this road extended south to Old Town and reached the port of Bangor, a port closed with ice from four to five months of the year, over the line of the Maine Central Railroad. Under then existing conditions cheaper freights for the lumber and potatoes, which constitute a large percentage of the freight carried by the road, was a matter of much importance to northern Maine. There had been one or two seasons when the movement of potatoes to market over an all-rail line left the Aroostook farmer hardly enough to pay cost of production. Another disadvantage was a shortage of cars at the time when most needed, a condition brought about by sending a large number of cars into distant states, which were slow in getting back.

The revenue freight carried by this road for the year ending June 30, 1902, amounted to 925,611 tons, and for the year ending June 30, 1906, to 1,377,155 tons, an increase of 451,544 tons, or 48.8 per cent; while the shipment of potatoes for the former year amounted to 3,112,466 bushels, and the latter year to 7,937,867 bushels, an increase of 4,825,401 bushels, or 155 per cent in the four years. Of the crop of 1905 there were shipped to points south of Philadelphia 790 carloads, or over 350,000 bushels. The shipment of fertilizers into the county for

the season of 1902 amounted to 19,065 tons, and for the season of 1905, to 31,036 tons.

There are more or less fluctuations from year to year in the potato crop of Aroostook county, yet conservative estimates put the normal annual increase at from 15 to 20 per cent; and the manufacture of lumber, pulp and paper along the line of the road is constantly on the increase. New lumber mills are being constructed at Milo and Van Buren, and one is being rebuilt at Brownville, a new hardwood mill is nearing completion on the Fish river branch, while extensive pulp and paper mills at Burnt Land rips and Dolby rips on Penobscot river, between the villages of Millinocket and Medway, are assured in the near future, a vast amount of work to this end having been performed the past season, consisting of twelve miles of railroad from Millinocket to the sites of the new mills, the construction of dams and mill foundations, offices, stores and dwellings.

The lumber cut within the territory covered by this road for the season of 1905 was 250,000,000 board feet, over 200,000,000 feet of which will be shipped over this line, a large increase over former years. The increase in population in Aroostook county from 1890 to 1900 was 11,155, and the indications are that the increase since the latter date has been even at a greater ratio.

The rapid development of the country traversed by this road and consequent increase in freight traffic, often resulting in large accumulations of freight along the line which could not be seasonably moved, made the demand for a short line to open tide water almost imperative.

NORTHERN MAINE SEAPORT RAILROAD.

Some two years prior to the survey of the road men interested in the project made a careful examination of the west side of the Penobscot bay and river and found that Stockton harbor possessed the necessary depth of water, was practically landlocked and was, in every way, fitted for their purpose as a railroad terminal.

This new route seemed to be the logical and business-like solution of the northern Maine transportation problem, as it would furnish quick transportation for heavy and bulky freight to a deep seaport open all the year.

After deciding to build the road to Stockton harbor two local business men were employed by its promoters to bond the farms and lots along the shore from Squaw Point on Cape Jellison, to Kidder's Point, thus securing almost the entire water front of Stockton harbor; and also beyond Kidder's Point, extending into Searsport harbor, as far as Mack's Point. They also secured a farm back of the village, a farm which contains a large deposit of granite. These trades were practically all closed before the people of the town had an idea that it meant a railroad.

Considering the local value of lands at the time, the prices paid for these shore farms ranged from 50 to 200 per cent above the normal price, but since the construction of the road was commenced real estate men and speculators have entered the field and are making purchases of any available lands within one or two miles of the center of business, at a figure ten-fold greater than former prices.

The survey was made during the winter of 1904-5. About the middle of January, Mr. J. F. Spellman of Bangor, the wharf contractor, was looking over pile sites in Stockton harbor, and the purchase of Sears' Island was reported. About the same time George M. Houghton and Judge Louis C. Stearns of Bangor, were at Belfast and other towns along the route, in the interest of settling land damages over the right of way.

In February, 1905, the necessary legislation was obtained to allow the road to build piers and wharves in and near Stockton harbor, also to bridge across tide water in places where necessary. By the middle of February Mr. Spellman had a crew of men at work and a donkey engine and other appliances for wharf building, piling was being cut and hauled from nearby forests, and railroad ties being hauled to the right of way, offices being rented at Stockton village, and preparations being made to push the work all along the line as soon as the weather would permit.

Early in March the first crew of Italian laborers arrived at Stockton to commence work on the road-bed, and wharf building was well under way. By the middle of March crews had gathered at various points along the line from South Lagrange to Stockton, building shanties, clearing the right of way and accumulating materials, and at some of the cuts dynamite blast-

ing of the frozen ground had commenced. Late in March a steam shovel was brought over from Bucksport.

Work on artesian wells was commenced early in April. April 19 the first locomotive was brought over from Bucksport and set to work hauling a gravel train on the Cape, and April 29 a second and larger locomotive was landed at the Cape to be used on a construction train.

Early in May cargoes of rails began to arrive at Cape Jellison. Early in June the steamboat wharf was commenced at Kidder's Point and the round house at Mack's Point was reported nearly completed. A wharf and coal pockets were then being constructed at Mack's Point. Here is a large area of level ground over which to run necessary tracks, and water enough off the wharf to float the largest vessels that come into port, with unobstructed navigation to the sea.

Freight trains began running over the road early in November, running at first during the night so as not to interfere with the work of ballasting.

November 12, 1905, President Cram and the railroad commissioners went over the road in a special car on a tour of inspection. November 18 the first carload of potatoes reached Stockton harbor and the next day sixteen more carloads arrived. These, with other later arrivals, were shipped by the steamer Foxhall, to New York. November 27 the time-table went into effect, giving two passenger trains daily each way.

The opening of the road to Stockton Springs at once relieved the situation as far as lumber is concerned, as the chief requirement, after wharf facilities are provided, is plenty of yard room to accommodate the lumber cars while awaiting to be taken to the docks for loading on schooners which are readily chartered, but the establishment of a regular line of freight steamers of a capacity to handle the big surplus stock of potatoes is a more difficult proposition, for freight steamers, such as are needed here, are not always available.

But little was done in the way of shipping potatoes of the crop of 1905 from this port, but arrangements were made during the past year for a line of freight steamers to go on in season to handle a part of the crop of 1906, the first cargo clearing late in September. During the fall many cargoes were also shipped by schooners to various ports along the coast.

The movement of the immense crops of corn and wheat raised in the great West is one of the serious problems with which railroad managers in that section of the country have to contend. Farmers and shippers are generally anxious to market these products as soon as possible after the harvest, often to fill contracts for early delivery. Railroads that can easily care for all freight offered at other seasons of the year are often unable, despite the utmost efforts of their shipping agents, to readily transport to market the millions upon millions of bushels of grain that come pouring in at every station, and the annual complaint of a shortage of cars has been heard for many years.

A similar condition in regard to the shipment of Maine potatoes is something of recent origin. In very recent years the potato crop of Maine, and especially in Aroostook county, has been increasing by leaps and bounds. Since the beginning of the potato rot in the early forties and prior to 1902, except in the year 1895, the entire crop of the State never reached 10,000,000 bushels. Owing to extremely low prices the crop of 1895 was hardly worth the marketing, and there was no pressure from shippers.

With over 10,000,000 bushels raised in Maine in 1902 the crop has practically doubled, and the shipment over the Bangor and Aroostook Railroad of the crop of 1905 was three-fold greater than that of the crop of 1902, and the movement of the crop of 1906, over the same line, promises to be much greater than that of the previous year. The proposition which faces the railroads is the movement of approximately 10,000,000 bushels of potatoes out of Aroostook county, which means about 1,000,000 bushels per month, for the shipping season.

During the early fall much complaint of a shortage of cars was heard from Aroostook county but, with the terminal facilities for storage, present and prospective, as well as many more storage houses to be built at the different railroad stations, and with the increased number of potato cars with which the company is providing itself, so as to make rapid shipments from the potato houses along the line of the road to tide water and quick return of cars, besides the assistance, from other roads, in the matter of furnishing cars for potatoes to be shipped to points along their several lines, the perplexing question of seasonably marketing the immense annual crop of potatoes grown in northern Maine, will doubtless eventually be solved.

Paper is another important product of our northern forest that finds an outlet at this port. The Great Northern Paper Company is manufacturing at its plant in Millinocket 275 tons of paper per day, and the new mills, now being constructed on the line of the new Schoodic Railroad branch, will add 150 tons more, making a daily output of 425 tons.

During the past season this company has had built a large four-masted schooner which will make regular trips between Stockton, Boston and New York, taking out paper, potatoes and other freight, thus relieving any congestion of paper freight such as might occur if depending on all rail shipments.

CAPE JELLISON.

On the easterly side of the harbor along the Cape Jellison shore are the main business docks. Wharf No. 1 is built along the shore, is 1,750 feet in length, has a width of 47 feet of planking and, by cutting and filling, has a further width of about 350 feet of earth. Along the length of this wharf, partly on the planking and partly on the earth, run six railroad tracks. These tracks are usually filled with loaded lumber cars, where a shifting engine sets them on to the outer track, or upon the tracks of wharf No. 2, as fast as needed for unloading. This wharf is devoted exclusively to lumber.

At the northerly end of this wharf another wharf 80 feet in width extends diagonally 600 feet into the harbor, from which wharf No. 2 runs parallel with and 127 feet from wharf No. 1, a distance of 1,000 feet by 200 feet in width, and contains six tracks. On this wharf is located a warehouse for general merchandise, 138 by 45 feet, which also contains a telegraph office and office for freight clerks. This wharf is devoted largely to lumber and general merchandise.

One hundred and twenty-five feet further out, wharf No. 3 runs parallel with No. 2, a distance of 1,100 feet by 80 feet in width, on which several tracks are laid. Vessels loading with potatoes are docked at this wharf.

These wharves, taken together, give about one and one-fourth miles of frontage where vessels may be docked.

At the head of the wharves and connected by tracks with wharf No. 3, a potato storage house was partially constructed the past summer, by Carter and Corey of Presque Isle. The

house, as planned, is to be 1,500 by 125 feet, with 24-feet posts, but only a length of 600 feet has yet been completed. This will store about 1,500 carloads of potatoes. The house is conveniently divided into bins 22 by 11 feet, with a capacity of about 1,200 barrels of potatoes each. The building is equipped with electric carriers, by means of which potatoes may be conveyed to or from the bins.

KIDDER'S POINT.

At Kidder's Point, on the westerly side of the harbor, is situated the steamboat wharf. This wharf is 150 feet in width and extends 800 feet into the harbor. It is illuminated by 15 arc lights.

Three tracks extend the length of the wharf. Two landing slips have been constructed on the front end and six on the northerly side, two of which open into a warehouse 135 by 45 feet, and plans are made for six slips on the southerly side, to be constructed when needed. On the southerly side and near the head of the wharf is located the passenger station with large waiting and store rooms and ticket office on the first floor, and offices on the second floor. Here George M. Houghton, assistant to the president, has his office, looking after all matters of the road at the terminal.

At this point the track of the main line of the road is some 20 rods back from the head of the wharf, and passengers take the train from a platform on the main line, but whenever a regular line of steamers shall land at this wharf it is the intention of the management of the road to back the trains down to the station house for passengers. The past season only the local bay and river steamers have made regular landings at this dock.

Directly back of the steamboat wharf and near the main line of the road, an electric light and power station was constructed the past year. The building is of brick and is 80 by 40 feet in size, with a chimney 95 feet in height. Two boilers, aggregating 350 horse power, have been installed. Plans are made so that, by installing more boilers, the power may be trebled without enlarging the building. From this plant electric power is distributed to the various wharves and yards, to be used in handling heavy freight and also for lighting, over 100 arc lights, besides many incandescent lights, having already been installed at the various docks and yards.

MACK'S POINT.

Mack's Point, in Searsport harbor, is about one and one-half miles below Kidder's Point, and is the southern terminus of the road. Here the Penobscot Coal and Wharf Company, during the year 1905, constructed a wharf 500 feet into tide-water, also coal pockets of a storage capacity of 50,000 tons. The most modern facilities for handling coal are here in use and, with two hoisting towers, from 1,000 to 1,200 tons per day can be discharged from steamers either into the coal pockets or to cars on the track, as desired.

During the fall of 1906 work was here commenced on a plant for handling and packing fertilizers. It is understood that the main building will be 300 by 40 feet, and 30 feet high, and that the barreling building will be 240 by 160 feet, and one story high. The plan also contemplates the building of a wharf 550 feet into the harbor and 40 feet in width, upon which will run a spur track from the railroad.

DREDGING.

The harbor bottom in the vicinity of all the docks has been carefully examined by divers and found to be a formation of clay, absolutely free from rocks, so the cost of dredging the inshore berths for vessels will be comparatively light. A dredger has been kept at work through the past season keeping well abreast of the work of wharf building.

YARDS, WATER SUPPLY, ETC.

The principal freight yard is located on the main land at the junction of the Cape Jellison spur track with the main line and about one and one-half miles from the wharves. This yard will accommodate about 200 cars, but more room is needed. To provide this room the grade along the spur track on the Cape is being widened, which will eventually double the capacity of the yard and will render the handling of loaded cars at the docks much more convenient.

The turntable is located at Mack's Point, also a roundhouse with stalls for six engines. There is also a small roundhouse near the main freight yard accommodating two engines.

Artesian wells, ranging in depth from 242 to 300 feet, have been drilled at Mack's Point, Kidder's Point, at the docks on

Cape Jellison and on the main line of the road about one-fourth of a mile above Stockton Springs station. Water is pumped from these wells by steam power into elevated tanks of sufficient capacity to supply all present needs.

IMPROVEMENTS ON CAPE JELLISON.

During the past season there have been employed at Cape Jellison from 400 to 500 men, about 200 in loading vessels, the others on the wharf extensions, potato house and other buildings, with still a large crew excavating and filling for more yard room, and the matter of housing these workmen has been quite a serious problem.

The St. John Lumber Company has had erected an office and a boarding house for their men, the Ashland Lumber Company has built an office, and parties from Bangor have built a large boarding house which will accommodate about 75 men. Late in the season two large buildings, intended for stores with tenements overhead, were commenced. Outside of these perhaps a dozen small dwellings, rough boarded and covered with tarred paper, have been erected. In one such house, one and one-half story, with only two small rooms on the first floor, fifteen boarders were accommodated. A few sod houses and more box-like board shacks covered with paper, sheltered a large crew of Italian laborers. Practically every available boarding place on the Cape and at the village has been utilized. A very few small houses at quite a distance from the wharves have been built for rent.

One farm house has been converted into a store and four new stores erected, but these new buildings, like most of the new dwellings, are rough, temporary affairs, where tarred paper takes the place of shingles and clapboards, but they are well stocked with such goods as are most called for in that primative village, including groceries, meats, clothing, shoes, fruit, confectionery, tobacco, etc. A cobbler shop and two barber shops seemed to be doing a good business. But little has been done in the matter of grading or smoothing up the grounds. For the most part the old stone walls along the highway still block up what should be a lawn or front yard to the dwellings. A few new streets have been laid out and no doubt many substantial buildings will be erected in the near future.

Early in 1905 Rev. J. L. Corson opened a mission tent on the Cape, holding religious services on Sunday and several evenings during the week. The tent also served as a public reading room where a small supply of books and papers were kept. A two-story mission house has since been erected. In the basement are several public bathrooms which are well patronized. On the first floor is a large audience room and reading room, all in one, while the upper story serves as a tenement for Mr. Corson and family. There is also an office on the second floor occupied by a dentist one or two days in the week.

UNITED STATES SHIPPING COMMISSIONER.

Under present laws a United States Shipping Commissioner is appointed at the port of entry of customs districts, under the Department of Commerce and Labor, Bureau of Navigation. The district of Belfast includes the ports of Belfast, Camden, Rockport, Vinalhaven and Stockton. On account of the large amount of shipping at this new port the present shipping commissioner, Gershom L. Burgess, has recently removed to Stockton Springs and established his headquarters on the Cape.

In former times the sailing crews did the loading and discharging of vessels, but at the present time this work is performed by stevedores, and the captain of a vessel usually finds it cheaper to let his crew go when he enters port and pick up a new crew when ready for sea, than to keep his men on pay while in port.

It is the duty of the shipping commissioner to see that crews are available for all outgoing vessels and that proper contracts between the captain and the members of his crew are signed before leaving port, the captain paying a small fee and certain incidental expenses. All disputes or misunderstandings between the captain and his men, which cannot be mutually settled, are referred to the commissioner for adjustment.

STOCKTON SPRINGS WATER COMPANY.

The matter of a water supply for the village has long been agitated and a charter for the purpose has been in existence for a number of years, but nothing in the line of construction was attempted until the past season.

The Stockton Springs Water Company has laid an 8-inch main from Half Moon pond, situated near the north line of the town of Searsport, to a reservoir on the high land back of Stockton Springs village. From the reservoir a 10-inch main conducts the water for distribution through the streets. A twenty-year contract has been made with the town for furnishing 20 hydrants with water for the extinguishment of fires, with a probability that seven more will be added shortly. Some seven or eight miles of street mains are being laid. Early in October, 1906, a fire department was organized.

The water company also has a contract to furnish the town of Searsport with water to be delivered through a main at the town line, but has nothing to do with the distribution of water in that town.

With an ample water system the town is now prepared to commence work on a system of sewers, a work which will doubtless be inaugurated in the near future.

PENOBSCOT PARK.

The opening of the railroad has been the means of developing a new resort for excursionists between Kidder's Point and Mack's Point in the town of Searsport, and known as Penobscot Park. The location is on a point of land about 15 acres in extent, which is connected with Sears Island by a bar which is bare at low water several hours of each tide.

On the highest point of the park has been erected a pavilion, 78 by 58 feet in size and two stories high, with a broad veranda around the four sides. Shore dinners are here served and it is evident that the past season has been a prosperous one for the owners. There is a dance pavilion on the grounds, 50 by 30 feet in size, also a merry-go-round which will accommodate 40 riders, both of which have been well patronized. The grounds have been laid out for baseball, football, golf, tennis and other games.

This park is owned by the Penobscot Park Company, the local manager being B. C. Yerxa, of Searsport.

STOCKTON SPRINGS.

The territory of what is now Stockton Springs was first incorporated as a town by the name of Frankfort, June 25, 1789, and

included, wholly or in part, not only its own territory, but the present towns of Hampden, Winterport, Frankfort, Prospect, Searsport and Belfast. February 24, 1794, the town of Prospect was incorporated, which included the present towns of Prospect, Stockton Springs and part of Searsport. The town of Searsport was incorporated February 13, 1845, being taken from the towns of Prospect and Belfast. On March 13, 1857, the town of Prospect was again divided and the southerly part incorporated into the town of Stockton, the name being changed to Stockton Springs by legislative act of February 5, 1889.

At the extreme end of Fort Point, a projection from Cape Jellison, Fort Pownal was erected by the Massachusetts Bay Colony, being completed July 18, 1759, and costing nearly 5,000 pounds. It was at once garrisoned by 100 men, under command of Brigadier General Jedediah Preble. The fort was dismantled and nearly leveled by the Americans at the outbreak of the Revolution, yet the outlines are still visible. Near the site of the old fort stands a lighthouse, being the most northerly light on Penobscot bay or river.

In the palmy days of shipbuilding in Maine, Stockton was one of the many busy coast towns in this line of work. Several shipyards in different parts of the town kept large crews of workmen busy and many of the young men followed the sea. Many sea captains from this town accumulated a competency by sailing Stockton-built schooners to domestic and foreign ports. But when the foreign carrying trade was lost to American vessels the shipyards grew up to brambles and Stockton became practically a dead town. The sea captains retired and the young men sought work in distant cities.

An attempt was soon after made to revive business by making Fort Point and Cape Jellison a summer resort. Land was purchased, a large hotel was built, a dozen or more cottages were erected, and the place began to flourish. But misunderstandings and contentions arose among the owners and the work was suspended before it was fairly well under way. The hotel has been burned and not more than eight or ten cottagers now spend their summers here.

About the time of the summer resort boom a company was formed to develop a new local industry, that of bottling and shipping mineral water to the markets of the country. This

water was procured from springs situated one and one-fourth miles northwesterly from the village. The capacity of these springs is 11,000 gallons in twenty-four hours. As an advertisement of this spring water the name of the town was changed from Stockton to Stockton Springs. The water was used for drinking at the summer hotel and some of the cottages, and considerable quantities shipped to Boston and other cities, but the undertaking was not a financial success and the springs have fallen into disuse.

With the building of the railroad the town sees a new life of activity before it. There is work for all at high wages. All garden and farm products find a ready market at remunerative prices. The old village is improving. New streets have been laid out, twenty or more new houses have been built during the year, and many old ones repaired. One or two new business blocks have been built and others improved or enlarged. Sidewalks have been repaired and new ones laid, and a spirit of enterprise seems to have taken hold of the people. One drawback to the village since the commencement of wharf building has been the lack of hotel accommodations. The old hotel was early repaired but was not opened to the public until late in the fall of 1906.

Stockton Springs has a Board of Trade whose members are alive to the interests of the town. It is officered as follows: President, Ralph H. Rockwood; vice-presidents, S. B. Merrithew, M. E. Colcord and Ralph Morse; secretary, Walter J. Creamer; treasurer, Josiah G. Lambert.

The town of Stockton Springs is beautifully situated on the west side of Penobscot bay. William D. Williamson, the historian, in speaking of Fort Point in this town said: "This may be considered at the mouth of Penobscot river and at the head of Penobscot bay." The town comprises a territory of about eighteen square miles and for the most part the soil is well adapted to agriculture. It has about eight miles of shore and its weir fisheries have been of considerable value. Cape Jellison, connected with the main land by a narrow isthmus, extends into the bay somewhat more than a mile in a southerly direction, and is triangular in shape. From its southeasterly angle Fort Point, a level tract and of much less elevation than the Cape, extends well out into the bay, forming the southerly shore of

Fort Point cove. In this cove vessels bound for Bangor drop anchor and wait for a tug, and outgoing vessels often remain here for several days waiting for a favorable wind, and barges wait for an ocean tug. Stockton harbor is formed by Cape Jellison on the east and the Searsport shore and Sears island on the west.

Stockton Springs village is situated near the head of the harbor and is ten miles northeasterly from Belfast, with which it has daily stage connections. It has one church and a good hall, and supports a dentist, two lawyers, and three physicians. A dozen stores and two livery stables are doing a good business. It has both telephone and telegraph connections.

Sandy Point in this town, three miles to the northeast of the main village, has four or five stores and several summer cottages along the shore, but neither village has any important manufacturing industries. There are railway stations at both villages. Both at Sandy Point and Fort Point are wharves where the river steamers make regular landings. Sandy Point was the site of the duck farm which was successfully run by French Brothers for nearly twenty years, but when the railroad was built it ran directly through the plot of ground on which were located the sheds where the ducks were reared, and so the enterprise has been abandoned.

The future growth of the town must necessarily depend largely upon the introduction and increase of manufacturing industries, for the transhipment of freight can give employment to only a few hundred workmen at most. The readiness with which the native woods, both hard and soft, may be obtained from our northern forests would make this an ideal place for any line of manufacture requiring a large percentage of this material. In fact, any industry adapted to this section of the country, will find advantages here which are lacking in many places.

Outside of Portland there is no place in Maine so favorably situated in regard to shipping facilities as this new seaport town. With a railroad covering a territory of almost boundless resources in lumber and agricultural products, larger than the State of Massachusetts, with one of the best harbors on the coast with good depth of water and perfect protection from storms, which can be enlarged to almost any extent, both northerly into

Fort Point cove and southerly through the long stretch of Searsport harbor, with immense docks which are being constantly extended, with a location and natural scenery hardly surpassed at any point along the coast, Stockton Springs cannot fail to attract capitalists who are seeking investments in profitable enterprises, as well as the seekers for health and pleasure whose ever increasing thousands annually seek our shores.

THE MANUFACTURING INDUSTRIES OF MAINE.

Compiled from United States Census Bulletin for 1905.

In his letter of transmittal accompanying the bulletin of Census of Manufactures of Maine for 1905, Hon. S. N. D. North, Director of the Census, says:

"The census of the manufactures of Maine was taken in conformity with the requirements of the act of Congress of March 6, 1902. This is the first census in which the canvass has been confined to manufacturing establishments conducted under what is known as the factory system, thus excluding the neighborhood industries and hand trades. The statistics for these mechanical trades have been a confusing element in the census of manufactures, and their omission confines the data to a presentation of the magnitude and growth of the true manufacturing industries of the country. To secure comparable figures for 1900, it was therefore necessary to revise the published reports of the Twelfth Census, and, in comparing the results of the present with former censuses, the different bases should be held in mind.

"The revision of the published statistics for 1900, necessary for purposes of comparison, involved considerable difficulty. Certain industries, such as custom millinery, custom tailoring, dressmaking, taxidermy, cobbling, carpentering, and custom grist and sawmills were wholly omitted. But the only available information on which to base the elimination of nonfactory establishments from industries which included factories as well as local establishments was that contained in the original reports from these establishments, and those reports were not collected with such segregation in view. It was found that some establishments, which in 1900 did little real manufacturing, had in the five years developed into true factories. On the other hand, in certain establishments, the strictly manufacturing operations conducted in 1900 had later been discontinued, although the establishments were still in business doing custom or repair work only. The latter class, however, was composed mainly of small establishments, and, except as to the number reported, their inclusion or omission has little effect on the statistics.

"Reports were not secured from small establishments in which manufacturing was incidental to mercantile or other business, or for establishments in which the value of the products for the year amounted to less than $500."

As above limited the statistics of the manufacturing industries of the State of Maine for the censuses of 1900 and 1905 are here summarized:

Number of establishments, 1905	3,145
Number of establishments, 1900	2,878
Capital, 1905	$143,707,750
Capital, 1900	$114,007,715
Salaried officials, clerks, etc., number, 1905	3,772
Salaried officials, clerks, etc., number, 1900	3,103
Salaries, 1905	$3,988,797
Salaries, 1900	$3,050,676
Wage-earners, average number, 1905	74,958
Wage-earners, average number, 1900	69,914
Total wages, 1905	$32,691,759
Total wages, 1900	$25,730,735
Men 16 years and over, 1905	56,662
Men 16 years and over, 1900	50,382
Wages, 1905	$27,315,682
Wages, 1900	$20,981,559
Women 16 years and over, 1905	16,825
Women 16 years and over, 1900	17,357
Wages, 1905	$5,106,692
Wages, 1900	$4,445,865
Children under 16 years, 1905	1,471
Children under 16 years, 1900	2,175
Wages, 1905	$269,385
Wages, 1900	$303,311
Miscellaneous expenses, 1905	$12,485,167
Miscellaneous expenses, 1900	$7,528,399
Cost of materials used, 1905	$80,042,090
Cost of materials used, 1900	$61,210,327
Value of products, including custom work and repairing, 1905	$144,020,197
Value of products, including custom work and repairing, 1900	$112,959,098

It will be noted that between the census of 1900 and that of 1905 the number of establishments increased 267. The capital increased $29,700,035, or 26.1 per cent, and the value of products, $31,061,099, or 27.5 per cent; while the average number of wage-earners increased 5,044, or 7.2 per cent, and the amount paid for wages, $6,961,024, or 27.1 per cent.

The reports of the Twelfth Census show 6,702 establishments in Maine, with 74,816 wage-earners, and products valued at $127,361,485. Of these establishments, 2,878—employing 69,914 wage-earners and manufacturing products valued at $112,959,098—are comparable with the class of establishments included in the census of 1905, when the number of establishments reported was 3,145, the number of wage-earners 74,958, and the value of the products $144,020,197.

SPECIFIED INDUSTRIES.

The table on page 104 shows the totals for the State by specified industries, which includes all industries having three or more establishments.

The 81st item in the table of specified industries, which includes 97 establishments, is made up of 74 minor industries which have only 1 or 2 establishments each in the State. They are as follows:

Ammunition	1
Automobiles	1
Babbitt metal and solder	1
Bags, paper	1
Belting and hose, leather	1
Buttons	1
Card cutting and designing	1
Carpets, rag	1
Carriages and sleds, children's	1
Cars and general shop construction and repairs by street railroad companies	2
Charcoal	2
Chemicals	1
Clothing, horse	1
Coffee and spice, roasting and grinding	1
Condensed milk	1
Cordage and twine	2

Cotton waste	1
Dairymen's, poulterers', and apiarists' supplies	2
Druggists' preparations	2
Dyeing and finishing textiles	1
Electrical machinery, apparatus, and supplies	2
Explosives	1
Felt goods	2
Fur goods	2
Galvanizing	1
Gas machines and meters	2
Glass, cutting, staining and ornamenting	1
Gloves and mittens, leather	1
Glue	1
Gypsum wall plaster	1
Hairwork	2
Hammocks	1
Hand knit goods	2
Hand stamps	1
Hats, felt	1
Hones and whetstones	1
House furnishing goods, not elsewhere specified	1
Iron and steel, steel works and rolling mills	1
Iron and steel forgings	2
Japanning	1
Kaolin and ground earths	1
Lamps and reflectors	1
Lasts	1
Liquors, malt	2
Matches	1
Mats and matting	1
Musical instruments, organs	1
Musical instruments, pianos	1
Oakum	1
Oilcloth and linoleum, floor	1
Paints	1
Perfumery and cosmetics	1
Plated ware	2
Pottery, terra cotta, and fire clay products	2
Pulp goods	1
Pumps, not including steam pumps	1

Manufactures by

Consecutive number.	Industry.	Number of establishments.	Average number of wage earners.			
			Men over 16 years.	Women over 16 years.	Children under 16 years.	Total.
1	Agricultural implements	13	151	2	.....	153
2	Awnings, tents and sails	26	83	6	.....	89
3	Baskets and rattan and willow ware	3	12	.....	.....	12
4	Blacking	3	9	19	.....	28
5	Bookbinding and blank book making	11	68	33	.....	101
6	Boot and shoe cut stock	4	7	5	.....	12
7	Boot and shoe findings	4	97	65	1	163
8	Boots and shoes	50	3,942	1,791	42	5,775
9	Boxes, fancy, and paper	9	49	168	5	222
10	Boxes, wooden packing	26	595	11	3	609
11	Brass castings and brass finishing	4	61	2	.....	63
12	Bread and other bakery products	151	358	86	25	469
13	Brick and tile	66	328	1	1	330
14	Brooms and brushes	10	24	19	.....	43
15	Butter	36	72	2	.....	74
16	Canning and preserving, fish	141	1,386	911	265	2,562
17	Canning and preserving, fruits and vegetables	77	452	238	43	733
18	Canning and preserving, oysters	11	44	64	12	120
19	Carriage and wagon materials	4	8	.....	.....	8
20	Carriages and wagons	154	450	1	.....	451
21	Cars and general shop construction and repairs by steam railroad companies	15	863	.....	.....	863
22	Cheese	10	4	.....	.....	4
23	Clothing, men's	28	117	533	.....	650
24	Clothing, women's	10	46	440	.....	486
25	Coffins, burial cases and undertakers' goods	8	49	2	.....	51
26	Confectionery	17	61	137	2	200
27	Cooperage	63	152	2	.....	154
28	Coppersmithing and sheetiron working	8	39	.....	.....	39
29	Cotton goods	15	5,323	6,469	590	12,582
30	Cutlery and edge tools	9	48	.....	.....	48
31	Dyestuffs and extracts	3	6	3	.....	9
32	Fertilizers	3	26	.....	.....	26
33	Flavoring extracts	9	6	14	.....	20
34	Flour and grist mill products	161	233	.....	1	234
35	Food preparations	4	4	2	1	7
36	Foundry and machine shop products	95	2,822	33	2	2,857
37	Furnishing goods, men's	4	2	13	.....	15
38	Furniture	11	232	4	1	237
39	Gas, illuminating and heating	15	100	.....	.....	100
40	Grease and tallow	4	64	.....	.....	64
41	Hardware	4	49	1	.....	50
42	Hosiery and knit goods	3	10	44	2	56
43	Leather goods	4	33	.....	.....	33
44	Leather tanned, curried, and finished	27	514	.....	1	515
45	Lime	8	663	.....	.....	663
46	Looking-glass and picture frames	3	13	8	1	22
47	Lumber and timber products	752	11,989	27	12	12,028
48	Lumber, planing mill products, including sash, doors, and blinds	84	937	2	1	940
49	Marble and stone work	42	2,415	4	4	2,423
50	Mattresses and spring beds	8	36	10	2	48
51	Mineral and soda waters	30	96	1	1	98
52	Models and patterns, not including paper patterns	4	5	.....	.....	5
53	Monuments and tombstones	19	109	.....	.....	109
54	Oil, not elsewhere specified	4	101	.....	.....	101
55	Paper and wood pulp	37	7,253	317	4	7,574
56	Patent medicines and compounds	24	38	84	2	124

Specified Industries, 1905.

Consecutive number.	Total wages.	Capital.	Miscellaneous expenses.	Cost of materials used.	Value of products.
1	$77,471	$393,859	$20,140	$75,565	$205,650
2	45,360	49,705	11,130	129,607	229,410
3	4,060	1,925	735	3,001	11,662
4	10,425	20,212	11,702	55,069	96,950
5	50,442	70,201	9,457	44,544	127,273
6	4,536	30,200	9,111	39,365	72,828
7	46,320	161,968	18,070	93,539	183,530
8	2,622,519	4,450,939	528,101	8,301,861	12,351,293
9	70,416	144,900	7,593	106,191	236,149
10	260,077	724,145	45,945	740,331	1,174,735
11	31,587	134,448	8,477	47,195	121,700
12	220,381	496,599	77,989	877,178	1,488,878
13	164,719	599,015	21,721	117,500	420,111
14	17,591	29,225	2,368	47,254	96,076
15	44,580	366,401	39,110	1,009,112	1,186,973
16	1,047,691	2,144,690	239,619	2,982,025	5,055,091
17	215,756	1,213,027	189,616	1,028,876	1,891,790
18	25,359	24,714	2,104	74,175	125,541
19	3,516	31,344	1,221	7,443	18,366
20	243,578	660,764	44,061	392,280	937,644
21	457,594	1,024,172	21,075	684,571	1,189,916
22	2,813	18,964	1,387	36,244	43,005
23	166,817	239,096	32,553	243,643	542,994
24	120,681	194,200	20,714	308,620	554,312
25	27,460	100,550	4,755	43,731	122,871
26	58,890	111,979	43,419	302,850	497,036
27	69,479	171,977	16,343	195,745	342,190
28	21,918	35,606	3,614	27,737	78,676
29	4,036,858	21,642,675	1,203,933	9,173,226	15,405,823
30	20,964	89,511	7,128	22,048	72,680
31	3,615	20,922	9,254	7,219	30,051
32	11,910	53,683	9,748	38,765	66,054
33	6,686	136,345	27,897	81,826	173,771
34	108,382	1,422,671	57,941	3,442,115	3,932,882
35	2,476	13,400	4,187	8,218	25,146
36	1,445,442	4,809,089	316,741	1,845,040	4,462,757
37	4,061	13,640	1,993	17,346	31,900
38	118,106	414,094	36,293	144,761	377,043
39	62,781	2,058,409	118,737	129,269	443,705
40	33,589	174,750	24,431	261,549	354,881
41	16,729	118,174	14,031	39,753	85,583
42	12,975	15,500	615	17,720	34,000
43	18,375	120,405	11,746	27,214	85,598
44	236,987	1,464,735	65,473	1,973,701	2,500,146
45	296,687	1,927,003	31,520	601,764	1,173,500
46	9,098	24,625	3,628	16,240	36,700
47	5,429,798	15,083,395	2,538,186	7,084,131	17,937,683
48	464,761	2,003,304	234,804	1,087,649	2,223,956
49	1,452,669	2,897,215	153,946	325,626	2,382,186
50	19,249	40,337	2,249	50,873	84,561
51	52,277	347,513	24,070	176,938	346,381
52	2,820	10,950	470	2,153	9,130
53	60,862	110,805	12,993	50,197	172,623
54	27,020	45,800	43,889	66,903	107,327
55	4,052,919	41,273,915	2,257,950	13,868,147	22,957,124
56	36,588	160,130	132,760	109,650	417,430

Manufactures by

Consecutive number.	Industry.	Number of establishments.	Average number of wage earners.			
			Men over 16 years.	Women over 16 years.	Children under 16 years.	Total.
57	Photo-lithographing and photo-engraving	3	7	5	.....	12
58	Pickles, preserves, and sauces	6	33	38	1	72
59	Printing and publishing, book and job	91	294	127	4	425
60	Printing and publishing, newspapers and periodicals	115	568	694	16	1,278
61	Roofing materials	5	109	.....	.....	109
62	Saddlery and harness	9	36	1	.....	37
63	Sausage	3	13	.....	.....	13
64	Shipbuilding, wooden, including boat-building	138	1,320	2	.....	1,322
65	Shirts	6	67	373	.....	440
66	Slaughtering, wholesale, not including meat packing	9	144	2	1	147
67	Soap	3	4	.....	.....	4
68	Sporting goods	5	3	1	.....	4
69	Starch	65	105	2	.....	107
70	Steam fittings and heating apparatus	3	32	.....	1	33
71	Stoves and furnaces, not including gas and oil stoves	4	207	.....	.....	207
72	Tinware	4	68	27	8	103
73	Tobacco, cigars and cigarettes	64	189	55	.....	244
74	Tools, not elsewhere specified	9	54	.....	.....	54
75	Trunks and valises	6	226	29	.....	255
76	Vinegar and cider	7	5	.....	.....	5
77	Wood, turned and carved	58	1,326	116	12	1,454
78	Woodenware, not elsewhere specified	15	139	54	7	200
79	Woolen goods	66	4,654	2,283	150	7,087
80	Worsted goods	6	836	656	164	1,656
81	All other industries	97	3,569	786	83	4,438
82	All industries	3,145	56,662	16,825	1,471	74,958

Specified Industries, 1905—Concluded.

Consecutive number.	Total wages.	Capital.	Miscellaneous expenses.	Cost of materials used.	Value of products.
57	4,568	25,114	4,857	11,650	27,104
58	16,512	49,087	10,183	154,885	194,859
59	194,858	551,984	59,604	205,178	627,770
60	522,494	1,555,165	913,876	682,269	2,644,561
61	44,886	411,692	14,007	13,496	72,773
62	17,949	56,816	3,283	42,740	98,161
63	7,265	34,248	7,137	48,549	74,816
64	759,288	1,221,691	170,130	1,715,117	3,038,016
65	137,227	209,639	23,630	163,052	386,159
66	78,432	281,680	43,195	475,131	648,067
67	2,613	19,969	1,298	10,311	18,640
68	1,547	12,725	573	2,114	9,310
69	47,442	630,157	31,059	364,443	523,994
70	19,756	136,163	67,719	10,734	114,958
71	117,599	382,185	41,590	71,863	304,268
72	50,048	209,557	33,598	371,988	430,596
73	122,810	136,675	55,757	181,524	449,563
74	28,854	116,069	16,915	50,116	131,424
75	115,247	419,785	44,718	220,943	520,084
76	1,449	12,350	891	6,246	16,794
77	577,499	1,721,557	109,918	667,607	1,640,816
78	74,420	323,794	21,995	95,063	231,077
79	2,876,065	14,990,211	1,015,149	8,528,645	13,969,600
80	637,774	2,562,193	211,884	2,282,590	3,609,990
81	2,058,437	7,499,424	803,456	4,980,543	8,909,612
82	$32,691,759	$143,707,750	$12,485,167	$80,042,090	$144,020,197

Rules, ivory and wood	1
Sand and emery paper and cloth	1
Saws	1
Shipbuilding, iron and steel	1
Shoddy	2
Show cases	2
Silk and silk goods	1
Slaughtering and meat packing, wholesale	2
Stamped ware	2
Stereotyping and electrotyping	1
Structural ironwork	2
Surgical appliances	1
Toys and games	2
Upholstering materials	2
Vault lights and ventilators	1
Washing machines and clothes wringers	1
Window shades and fixtures	2
Wool pulling	1

LEADING INDUSTRIES.

The 1,824 establishments reported in 1905 for 14 of the leading industries, as shown in the table on page 110, formed 58 per cent of the total number for the State. They controlled 82.4 per cent of the capital, gave employment to 79.1 per cent of the wage-earners, to whom 79.6 per cent of the wages were paid, and reported 78.7 per cent of the total value of products.

Textiles.

The combined textile industry, as shown in the table, consisting of cotton goods, woolen goods, and worsted goods, was the most important in the State, according to the value of products and the number of wage-earners. There was 1 establishment engaged in the dyeing and finishing of textiles, but this industry is not included in the textile group, since the statistics for the 1 establishment can not be shown separately without disclosing individual operations. Of the textile industries shown, the manufacture of cotton goods was first in rank among the selected industries in 1900 and third in 1905, while woolen goods was fifth and fourth and worsted goods twelfth

and ninth in the respective years. For the combined industry the capital increased $3,979,196, or 11.3 per cent, between the two censuses; the average number of wage-earners, 247, or 1.2 per cent; the wages, $531,714, or 7.6 per cent; and the value of products, $4,941,543, or 17.6 per cent.

In the manufacture of cotten goods the average number of wage-earners decreased 1,341, or 9.8 per cent, and the wages, $293,439, or 6.8 per cent; but the value of products increased $774,737, or 5.3 per cent.

For woolen goods the average number of wage-earners increased 807, or 12.9 per cent; the wages, $492,742, or 20.7 per cent; and the value of products, $2,336,368, or 20.1 per cent.

The manufacture of worsted goods, while comparatively the least important of the three branches of the textile industry, showed the largest percentages of increase. The average number of wage-earners increased 781, or 89.3 per cent; the wages, $332,411, or 108.9 per cent; and the value of products, $1,830,438, or 102.9 per cent.

Paper and Wood Pulp.

This industry was the most important single manufacturing pursuit in the State in 1905, although in 1900 it was third in rank. While there was a gain of but 2 in the number of establishments reporting, the capital increased $23,800,755, or 136.2 per cent; the average number of wage-earners, 2,723, or 56.1 per cent; the wages, $1,889,947, or 87.4 per cent; and the value of products, $9,727,849, or 73.6 per cent. At both censuses Maine held third rank among the states manufacturig paper and wood pulp. The output for the State increased from 10.4 per cent of the total for the United States in 1900 to 12.2 per cent in 1905. The value of products for this industry formed 11.7 per cent of the total value of products for the State in 1900 and 15.9 per cent in 1905.

Lumber and Timber-Products.

Measured by the value of products and the employment of wage-earners, the manufacture of lumber and timber products was the industry second in rank in the State at both censuses. Between the two censuses there was an increase of 105 in the

Comparative Summary of

Consecutive number.	Industry.	Census.	Number of establishments.	Capital.
1	Boots and shoes	1905	50	$4,450,939
		1900	48	5,148,278
2	Canning and preserving, fish	1905	141	2,144,690
		1900	117	8,481,056
3	Flour and grist mill products	1905	161	1,422,671
		1900	157	1,145,996
4	Foundry and machine shop products*	1905	99	5,191,274
		1900	112	4,032,950
5	Leather, tanned, curried and finished	1905	27	1,464,735
		1900	31	1,376,106
6	Lumber and timber products	1905	752	15,083,395
		1900	647	12,732,673
7	Lumber, planing mill products, including sash, doors and blinds	1905	84	2,003,304
		1900	70	1,351,555
8	Marble and stonework	1905	42	2,897,215
		1900	47	2,630,186
9	Paper and wood pulp	1905	37	41,273,915
		1900	35	17,473,160
10	Printing and publishing†	1905	206	2,107,149
		1900	199	2,032,254
11	Shipbuilding, wooden, including boat building	1905	138	1,221,691
		1900	115	1,315,820
12	Textiles: Total	1905	87	39,165,079
		1900	94	35,215,883
13	Cotton goods	1905	15	21,642,675
		1900	15	21,087,190
14	Woolen goods	1905	66	14,990,211
		1900	76	12,642,058
15	Worsted goods	1905	6	2,562,193
		1900	3	1,486,635
16	Total for selected industries for State	1905	1,824	$118,556,057
		1900	1,672	92,935,917
17	Increase, 1900 to 1905		152	$25,520,140
18	Per cent of increase		9.1	27.5
19	Per cent of total of all manufacturing industries in State	1905	58.0	82.4
		1900	58.1	81.5

* In 1905 includes establishments as follows: Foundry and machine shop products, 95; stoves and furnaces, not including gas and oil stoves, 4.

† In 1905 includes establishments as follows: Printing and publishing, book and job, 91; printing and publishing, newspapers and periodicals, 115. In 1900 includes printing and publishing, book and job, 79; printing and publishing, newspapers and periodicals, 120.

Fourteen Leading Industries.

Consecutive number.	Wage earners.		Miscellaneous expenses.	Cost of materials used.	Value of products, including custom work and repairing.	Rank.
	Average number.	Wages.				
1	5,775	$2,622,519	$528,101	$8,301,861	$12,351,293	5
	6,432	2,664,672	402,027	8,366,747	12,295,847	4
2	2,562	1,047,691	239,619	2,982,025	5,055,091	6
	5,567	1,184,850	97,859	2,578,636	4,779,733	6
3	234	108,382	57,941	3,442,115	3,932,882	8
	182	89,253	41,977	2,622,761	3,142,633	8
4	3,064	1,563,041	358,331	1,916,903	4,767,025	7
	2,143	1,036,034	142,334	1,553,168	3,298,706	7
5	515	236,987	65,473	1,973,701	2,500,146	12
	587	229,268	102,332	1,943,204	2,451,713	11
6	12,028	5,429,798	2,538,186	7,084,131	17,937,683	2
	9,671	3,439,507	940,365	6,594,268	13,281,561	2
7	940	464,761	234,804	1,087,649	2,223,956	14
	742	351,793	69,839	767,908	1,414,504	14
8	2,423	1,452,669	153,946	325,626	2,382,186	13
	1,979	989,470	89,243	143,496	1,634,494	13
9	7,574	4,052,919	2,257,950	13,868,147	22,951,124	1
	4,851	2,162,972	1,394,967	7,118,945	13,223,275	3
10	1,703	717,352	973,480	887,447	3,272,331	10
	1,585	595,273	510,948	647,869	2,605,387	9
11	1,322	759,288	170,130	1,715,117	3,038,016	11
	1,369	749,567	65,463	1,377,769	2,491,765	10
12	21,125	7,556,697	2,430,968	19,984,461	32,985,413	
	20,878	7,018,983	2,290,124	14,981,273	28,043,870	
13	12,382	4,036,858	1,203,933	9,173,226	15,405,823	3
	13,723	4,330,297	1,440,425	7,036,287	14,631,086	1
14	7,087	2,876,065	1,015,149	8,528,645	13,969,600	4
	6,280	2,383,323	659,319	6,842,679	11,653,232	5
15	1,656	637,774	211,886	2,282,590	3,609,990	9
	875	305,363	190,380	1,102,307	1,779,552	12
16	59,265	$26,006,104	$10,008,929	$63,569,183	$113,397,146	
	55,986	20,511,642	6,147,478	48,696,044	88,663,488	
17	3,279	$5,494,462	$3,861,451	$14,873,139	$24,733,658	
18	5.9	26.8	62.8	30.5	27.9	
19	79.1	79.6	80.2	79.4	78.7	
	80.1	79.7	81.7	79.6	78.5	

number of establishments reporting, accompanied by an increase of $2,350,722, or 18.5 per cent, in the capital, and $4,656,122, or 35.1 per cent, in the value of products. The average number of wage-earners increased 2,357, or 24.4 per cent, and the wages, $1,990,291, or 57.9 per cent. The increase in the value of products does not indicate the real growth at the present census over that in 1900. A change in the methods of securing reports at the census of 1905 resulted in the elimination of certain duplications that appeared in 1900. In the latter year that product of the lumber mills which was dressed or remanufactured in planing mills connected with them entered twice into the value of the products of the industry—first as rough lumber and then as a finished product. If a similar duplication is added to the total for the census of 1905, to make the statistics for that year comparable with those for 1900, the sum of $2,030,842 would be added to the value of products and the actual increase would be raised from $4,656,122, or 35.1 per cent, as it appears in the table, to $6,686,964, or 50.3 per cent.

Spruce was the principal variety of sawed lumber, the value of this species constituting over 50 per cent of the value of all kinds reported at both censuses. Spruce sawed increased 47,325,000 feet, or 11.8 per cent, in quantity, and $1,674,808, or 34.5 per cent, in value. White pine and hemlock were next in importance, in the order named, and increased both in quantity and in value. White fir to the amount of 37,284,000 feet was shown in 1905, but no comparison with the amount sawed at the former census is possible, since this variety was not presented separately in 1900. Each of the remaining varieties, except birch, decreased in the quantity sawed.

The following shows the chief varieties sawed during 1905, the quantity in board feet, and total value, to which we have added the value per thousand:

Spruce	449,192,000
Value	$6,523,587.00
Value per thousand	$14.52
White pine	245,059,000
Value	$3,583,950.00
Value per thousand	$14.62
Hemlock	97,612,000
Value	$1,138,010.00
Value per thousand	$11.65

White fir	37,284,000
Value	$459,821.00
Value per thousand	$12.33
Birch	18,342,000
Value	$347,626.00
Value per thousand	$18.95
Oak	7,170,000
Value	$127,254.00
Value per thousand	$17.74
Cedar	3,671,000
Value	$67,201.00
Value per thousand	$18.30
Maple	2,568,000
Value	$39,615.00
Value per thousand	$14.25
All other	2,962,000
Value	$44,337.00
Value per thousand	$14.96

Planing Mills.

Closely allied with the lumber and timber industry are the independent planing mills. The reports for 1905 showed that there had been an increase of 14 in the number of planing mills since 1900. The capital increased $651,749, or 48.2 per cent, and the value of products, $809,452, or 57.2 per cent; while the average number of wage-earners increased 198, or 26.7 per cent, and the wages, $112,968, or 32.1 per cent.

Boots and Shoes.

This industry ranked fifth in 1905, having fallen from fourth place in 1900, and it is evident that the industry has retrograded since the census of 1900. While the number of establishments reported in 1905 was larger by 2 than the number in 1900, there were decreases of $697,339, or 13.5 per cent, in the capital; 657, or 10.2 per cent, in the average number of wage-earners; and $42,153, or 1.6 per cent, in the total wages. The value of products, however, increased $55,446, or less than 1 per cent.

Canning and Preserving, Fish.

This industry held sixth rank in 1900 and in 1905. There was an increase of 24 in the number of establishments and while the capital decreased $6,336,366, or 74.7 per cent, and the average number of wage-earners, 3,005, or 54 per cent, the value of products increased $275,358, or 5.8 per cent. In the canning and preserving of fish Maine held second rank in the United States at both censuses, the value of the output, however, having fallen from 21.7 per cent of the total for the industry in 1900, to 19.2 per cent in 1905.

Foundries and Machine Shops.

The value of foundry and machine shop products gave this industry seventh rank at both censuses. The number of establishments was smaller by 13, but the capital increased $1,158,324, or 28.7 per cent; the average number of wage-earners, 921, or 43 per cent; the wages, $527,007, or 50.9 per cent; and the value of products, $1,468,319, or 44.5 per cent.

Flour and Grist Mills.

This industry held eighth rank in 1900 and in 1905. The number of establishments increased 4; the capital, $276,675, or 24.1 per cent; the average number of wage-earners, 52, or 28.6 per cent; the wages, $19,129, or 21.4 per cent; and the value of products, $790,249, or 25.1 per cent. Corn meal and corn flour, which formed the principal item of the products, decreased 12,870 bushels, or 1.4 per cent, in quantity, but increased $263,907, or 12.5 per cent, in value.

Printing and Publishing.

The combined industry, embracing the printing and publishing of newspapers and periodicals and book and job printing, held tenth rank in 1905 and ninth in 1900. Between the two censuses the number of establishments increased 7; the number of wage-earners, 118, or 7.4 per cent; the wages, $122,079, or 20.5 per cent; and the value of products, $666,944, or 25.6 per cent.

Of the value of products in 1905, the establishments publishing newspapers and periodicals furnished $2,644,561, or 80.8 per cent, and those engaged in book and job printing, $627,770,

or 19.2 per cent; while in 1900 the newspaper and periodical establishments furnished $2,190,017, or 84.1 per cent of the total, and job plants, $415,370, or 15.9 per cent. There were 72 typecasting and typesetting machines returned at the present census for the combined industry, 1 of which was reported by a job printing establishment. The 71 machines reported in 1905 for newspaper and periodical establishments gave employment to 105 operators, while in 1900, 44 machines furnished employment for 76 operators. The number of compositors in this branch of the industry other than those operating machines decreased from 576 in 1900 to 349 in 1905.

The total number of newspapers and periodicals published in 1905 was 158, while the number published in 1900 was 177. Of the former, 155 were published in English, 2 in French, and 1 in French and English; in 1900, 172 were published in English, 4 in French, and 1 in Finnish.

In 1905, of the 158 newspapers and periodicals published in the State, 17 were issued daily; 1, tri-weekly; 5, semi-weekly; 94, weekly; 3, semi-monthly; 37, monthly; and 1, quarterly. The aggregate circulation per issue of all the newspapers and periodicals reported in 1905 was 5,405,104. Of this circulation, 74,287 was for the daily papers; 24,990, for the semi-weeklies; 209,961, for the weeklies; 5,092,541, for the monthlies; and 3,325, for all other publications.

Shipbuilding, Wooden.

Although among the leading industries in the State, this industry was only eleventh in rank in 1905 and tenth in 1900. Maine ranked second at both censuses among the states engaged in the production of wooden ships and boats. The value of products for the State formed 12.5 per cent of the total for the United States in 1905 and 10.3 per cent in 1900. There was an increase of 23 in the number of establishments reported; the capital decreased $94,129, or 7.2 per cent, and the average number of wage-earners, 47, or 3.4 per cent; but the value of products increased $546,251, or 21.9 per cent.

Other Industries.

An increase in the value of products is shown for each of the two remaining leading industries, leather, tanned, curried, and finished, and marble and stone work. The former industry was

eleventh in rank in 1900 and twelfth in 1905, while the latter was thirteenth at both censuses.

MINOR INDUSTRIES.

Marked increases in the value of products are shown for other important industries, the principal ones being canning and preserving, fruits and vegetables, from $1,335,671 in 1900 to $1,891,790 in 1905; wood, turned and carved, from $853,298 to $1,640,816; bread and other bakery products, from $1,204,531 to $1,488,878; car construction and general shopwork by steam railroad companies, from $857,136 to $1,189,916; and boxes, wooden packing, from $599,858 to $1,174,735. Shipbuilding, iron and steel, constituted an important industry and increased in value of products, but since in each census year only 1 establishment was reported, the statistics for the industry are not shown separately, in order to avoid disclosing individual operations.

NEW INDUSTRIES.

Not reported in 1900 but included in the returns for 1905 were 20 new industries. These were represented by 40 establishments, which gave employment to 963 wage-earners and had products valued at $2,878,720.

MANUFACTURING IN CITIES.

Portland was the leading manufacturing city in the State in 1905, having displaced Lewiston, which was first in rank in 1900. For Portland there was an increase of 18.1 per cent in the capital, 15.5 per cent in the average number of wage-earners, and 24.5 per cent in the value of products. The manufacture of foundry and machine shop products, and planing mill products, the general shopwork and car construction by steam railroad companies, the printing and publishing industry, and the manufacture of clay products constituted the leading industries in 1905. There were general increases in nearly every industry. Not reported in 1900 but included in the returns for 1905 were 16 industries which gave employment to 200 wage-earners and had products valued at $786,618.

Lewiston ranked second in 1905. The increase in the value of products for this city amounted to 9.6 per cent. The manufacture of cotton goods constituted the leading industry, about

one-third of the total value of these products for the State being reported from this city. The average number of wage-earners employed in the cotton mills constituted over seven-tenths of the total number of all classes in the city, and the value of the output amounted to nearly three-fifths of the total for the city. The manufacture of woolen goods was also a prominent industry, employing 275 wage-earners and producing an output valued at $702,332. Other prominent industries, in the order of their importance, were the manufacture of boots and shoes, the dyeing and finishing of textiles, and flour and grist mill products.

Biddeford was the city third in rank in 1905. The manufacture of cotton goods was by far the most important industry in the city, while foundry and machine shop products and lumber and timber products were next in importance.

Auburn ranked fourth in 1905. The leading industry was the manufacture of boots and shoes, the value of these products forming about one-third of the total for the State. In this industry over seven-tenths of the total number of wage-earners were employed and over two-thirds of the total for all the products for the city were reported. The manufacture of butter and of bread and other bakery products ranked next in importance, measured by value of products.

In Augusta the printing and publishing of newspapers and periodicals formed the leading manufacturing industry, the value of products for this industry constituting about 47 per cent of the total for the State and 32 per cent of the total for all the products for the city. The manufacture of cotton goods and boots and shoes ranked next in the order named.

Bath was noted principally for its shipbuilding operations, both wooden and iron and steel. The combined shipbuilding industry employed nearly three-fourths of the total number of wage-earners and returned products valued at seven-tenths of the total output for the city. Foundry and machine shop products were next in importance.

In Bangor the manufacture of boots and shoes constituted the leading industry, while in Waterville the manufacture of textiles was most important.

In Rockland over one-half of the wage-earners and one-half of the value of products were reported by 4 establishments engaged in the manufacture of lime.

THE HASKELL SILK MILL.

In the city of Westbrook, six miles from Portland, is the only silk mill in Maine. Westbrook is a manufacturing city situated on the Presumpscot river, the outlet of Sebago lake. Connected with the Sebago system are 45 lakes and ponds with a combined water surface of 97 square miles, Sebago lake itself, according to a late report of the United States geological survey, covering 46 square miles. The same authority says: "Nowhere in the United States is there a better example of the success of storage of water and regulation of the flow of a stream than on the Presumpscot."

From the crest of the stone dam at the foot of Sebago lake to mean low tide at the foot of the lower falls, a distance by the river of 21.65 miles, the fall is 265.16 feet, an average of 12.25 feet per mile and, in proportion to its length, it probably has as many manufacturing sites as any of our secondary rivers.

The silk mill is situated in that part of Westbrook formerly called Saccarappa, and here also are the Dana Warp Mills and several smaller manufactories. About two miles below, at Cumberland Mills, are the well known pulp and paper mills of the S. D. Warren Paper Company, where over a thousand hands are constantly employed.

The Haskell Silk Company was organized in 1876, with James Haskell as president, Frank Haskell as treasurer, and E. J. Haskell as director and general manager. Upon the death of James Haskell the office of president was filled by Solomon Poole, and on the death of the latter, W. W. Poole, the present head of the corporation, became president. In 1886, Lemuel Lane succeeded Frank Haskell as treasurer, a position he still occupies. During the entire life of the plant, E. J. Haskell has been general manager of the manufactory. The company at the start employed only 6 persons, while now the employes number 164.

The old quarters were gradually enlarged until the steady increase in business forced the company to erect the present factory which, for its size and equipment, is one of the finest silk mills in the United States.

The company owns 65 acres of land bordering on the Presumpscot, and on the most elevated portion of the tract the new mill is situated. It is built of brick and is a continuous block, 299 feet in length, 50 feet in width, and two stories high. The boilerhouse and dyehouse are in a separate building, 114 feet long, 36 feet wide, and one story in height. There is also a fine office building 36 by 45 feet. This mill was erected in 1900, and is up-to-date in every particular.

At first the product was silk thread, but in 1880 looms were put in and the weaving of broad silks was begun. The mill now contains 200 looms and last year the entire output was 438,312 yards of broad silks, worth approximately $300,000.

The mill is operated by electricity, which is generated at Mallison Falls on the Presumpscot, where a dam was built and an electric power plant put in a few years ago. The horse power required for the silk mill is 150. The plant is not only run by electricity but is also lighted from the same source, and even the heat for finishing comes from electricity. The plant is heated by hot air, aided by blowers which, in summer, may readily be utilized to cool the air.

The number of employes at the present time is 86 men and 78 women. The wages paid last year amounted to $70,681.21. The mill is operated 60 hours a week, the time being so arranged that the employes have Saturday afternoons off. The operatives must necessarily be intelligent and skillful, for all the processes in silk manufacture require care and skill.

This country, like all other countries where the manufacture of silk is carried on, admits raw silk free of duty. The raw silk used at this mill is bought in Japan. Raw silk is silk just as it is taken from the cocoons. Every process except winding the silk from the cocoons is performed in the mill. The machinery used in the manufacture of silk is delicate and intricate, and nothing but the latest and most improved will do.

From the beginning of the enterprise the growth of the business has been continuous, and today it stands in the front rank in the manufacture of fine, reliable black dress silks. The goods

of this company are favorably known in the leading dry goods stores in every city of the United States, from Maine to California. The name "Haskell" is in itself a guarantee.

One great factor in the manufacturing and dyeing of silk is pure water, and the company has lately put in two artesian wells of a depth of over 200 feet each, striking veins of the purest water. These wells have a capacity of 50 gallons a minute.

The mill is owned entirely by Westbrook people and they are justifiably proud of such a prosperous industry.

Some facts in regard to silk manufacture in the United States will be of interest and value. The industry has developed wonderfully since the year 1870. In that year the value of silk goods of all kinds manufactured in the country amounted to only $12,210,662, while the importations for the same year amounted to $24,219,981, almost double the value of the home production.

In the year 1900, the value of silk goods imported was $26,803,534, and the value of that manufactured in the United States was $107,256,258, or four times the value of the goods imported. This surprising and gratifying increase was largely due to an encouraging government policy. In 1900 there were 483 silk mills in the United States, with a combined capital of $81,097,276, and giving employment to 65,416 hands. At the present time over 79,000 hands are employed in this industry. In 1870 the number of yards of silk goods manufactured in this country was 1,026,422, against 97,940,935 yards in 1900. In 1900 the United States stood third in the countries of the world in the manufacture of silk goods, and it is confidently predicted that in 1910 America will lead in this great industry.

Several other states besides Maine have at present only one silk mill, while the great majority have none. In 1900, New Jersey had 180 silk mills; Pennsylvania, 121; New York, 92; Connecticut, 38; and Massachusetts, 20. New Jersey will probably continue to lead in the manufacture of silk goods, although silk mills are multiplying rapidly all over the country.

The leading countries in the production of raw silk are China, Japan, India and Italy. In 1900 there were imported into this country 11,259,310 pounds of raw silk, valued at $44,549,672, or very nearly $4.00 per pound. Raw silk, at the present time, costs about $4.50 per pound. The attempt has been made many

times to cultivate the silk worm in this country, but with indifferent success. The Chinese, Japanese, Italians, etc., are adepts in the propagation of the silk worm, and their cheap labor enables them to produce the raw silk at a much lower cost than it could possibly be produced in this country. So, for the present, at least, it is much better for silk manufacturers to import the raw material.

THE PAPER BOX INDUSTRY.

The making of paper boxes is one of our minor industries, yet it is one of the many lines of manufacturing which, in the aggregate, furnish employment to about 75,000 of the men and women of Maine. In 1900 the number of hands employed in this industry was 187, of whom 38 were men and 149 women; in 1905, 222 were employed, 49 men, 168 women, and 5 children under 16 years of age; and, according to returns received at this office the present year, there are now 59 men and 238 women employed, a total of 297.

There has been little change in the number of plants in recent years, but considerable increase in the volume of business. In 1900 there were, in the State, 9 plants with a capital of $94,746, employing 187 hands to whom $54,571 was paid in wages, paying $98,887 for materials and $7,580 in miscellaneous expenses, and producing boxes to the value of $208,250. In 1905 the same number of plants, with a capital of $144,900, were giving employment to 222 hands, to whom $70,416 were paid in wages, paying $106,191 for materials and $7,593 in miscellaneous expenses, and producing boxes to the value of $236,149.

These box factories are well scattered over the State, one being located in Auburn, two in Bangor, one in Belfast, one in Brunswick, one in Ellsworth, one in Hallowell, and two in Portland. It will be noted that, with the exception of those in Brunswick and Ellsworth, the factories are all located in shoe manufacturing towns. As nearly all boots and shoes are now put up a single pair in a box, and shoe boxes being bulky, it is much more convenient to have these boxes made as near the shoe factories as possible.

The uses to which paper boxes are put are multiplying every year. Not only are boots and shoes packed in these boxes but practically all the smaller articles sold in the dry goods and hardware trades are packed in the same way. Millinery and fancy goods, hats and caps, confectionery and stationery, all require immense numbers of the larger sizes, and the jewelry and drug trades use almost countless numbers of the smaller makes.

Paper boxes are made of every quality, from the brittle strawboard box, in which the coarser goods are packed, to the most fancy article, lined with plush or satin, for the richest jewelry.

The pasteboard and paper used in the Maine paper box factories is nearly all imported from other states. Although Maine is manufacturing about one-eighth of all the paper and wood pulp made in the country, but very little is finished into the material used in making boxes.

The product of a few of the factories is nearly all marketed outside of Maine, but by far the larger number sell most of their output within the State.

The wages of men in these box factories range from $8.50 to $13.50 per week, and of women from $4.50 to $7.50 per week, according to location and the kind of work performed. Ten hours a day usually constitutes a day's work in this industry.

A general description of the more important paper box factories in the State is here given.

The Auburn Paper Box Company was formed and the industry established in 1880. Additions to the original plant were made in 1884, and today the factory is one of the largest in the State. It manufactures all kinds of paper boxes, except folding boxes. It is operated by electricity, 20 horse power being required. Its average complement of employes is 65. Auburn is the greatest shoe town in the State, and the demand for shoe boxes is large.

The Bangor Paper Box Manufacturing Company, C. D. Pressey, proprietor, was established in 1888. In 1897 important additions were made to the original plant. The present finely equipped factory has three floors and 10,000 square feet of floor space. The products are shoe, druggist and confectionery boxes of every description. A specialty is made of shoe boxes, and some idea of the extent of the business can be formed when it is known that an average of 1,250,000 boxes a year have been made and sold for the past eight years. The most rapid and modern improved machinery is operated, and every facility used that may expedite the industry. An average of 20 hands are constantly employed.

The paper box factory in Belfast is owned and operated by the firm of Leonard and Barrows. It was established in 1902, and occupies two floors, each 40 by 50 feet, and has 8 machines.

Shoe cartons are the main product of this factory. The motive power is steam, supplied from the shoe factory near by, 3 horse power being required. Eight hands are employed.

The Brunswick Paper Box Company was formed and the industry established in 1901. The plant occupies three floors of a building 120 by 40 feet, equipped for manufacturing the so called hand made box. The products are candy, jewelry, fancy candy, cigarette, display and shelf boxes. The power is electricity, 10 horse power being required. An average of 85 hands are employed in this factory.

The Casco Paper Box Company, Portland, was formed and the industry established in 1892. In 1902 a new building of brick, two stories in height, with a high basement, was erected. This factory, in its building and equipment, is equal to any in the country. It manufactures all kinds of paper boxes except folding boxes. It is operated by electric power, and employs an average of 78 hands. This is one of Portland's important industries.

The Portland Paper Box Company, Portland, is the oldest paper box industry in the State, having been established in 1876. It was incorporated in 1902. The plant occupies two stories and basement of a large building, with 3,000 feet of floor space. A general line of all kinds of stiff board boxes is produced, of all sizes and descriptions. They supply the trade demanding document boxes, stock boxes for millinery purposes, and for fancy goods. This plant is operated by electricity, 9 horse power being required. An average of 26 hands are employed. The officers are J. H. Carter, president, and J. A. Pratt, treasurer.

To show the extent and rapid development of this industry in the United States we note the census figures for three decades, which show that the total value of paper boxes produced within the country for the year 1879 was $7,665,553; for the year 1889 it was $18,805,330; and for the year 1899 it amounted to $27,316,317, showing an increase of nearly four fold in twenty years.

In 1900 there were in the state of New York, 275 paper box factories, in Massachusetts 165, in Pennsylvania 150, in Illinois 66, in Connecticut 60, and in New Jersey 57, while most other states had but few and some states had none, the industry naturally centering in those localities where the product is in greatest demand.

PULP AND PAPER INDUSTRY IN MAINE.

Among all the industries of the State probably none has had so rapid a growth as the manufacture of pulp and paper. Since the first pulp mill was started in Maine, about 38 years ago, the industry has had a steady and healthy growth, until now it stands at the head of all our manufacturing industries.

In the present investigation we have covered the operations of the present year, which is two years in advance of that covered by the United States Census taken in 1905. While we add but one establishment to the number shown by that census this, in connection with the many important enlargements of old establishments, shows a surprising increase in the volume of the industry over that of 1904.

As a matter of general interest and for comparisons of our own with other states in this matter, we present a list of all the states where the manufacture of pulp and paper is an industry, together with the value of the products in each state. We also give a synopsis of the industry in the United States for the year 1904 compared with 1899, followed by a similar synopsis of the industry in the State of Maine.

PULP AND PAPER MAKING IN THE UNITED STATES IN 1904.

The total value of the product of paper and wood pulp manufactured in the United States during the year 1904, as given out in bulletins of the Census of Manufactures taken in 1905, was $188,715,189, against $127,326,162 in 1899, and $78,937,184 in 1889.

The following shows the value of products in 1904 of all the states, having more than two establishments, which contributed to the pulp and paper industry. In those states having but one or

two establishments the totals do not appear separately, but are all included in the item "All other States":

New York	$37,550,605
Massachusetts	32,012,247
Maine	22,951,124
Wisconsin	17,844,174
Pennsylvania	15,411,032
Ohio	10,961,527
New Hampshire	8,930,291
Michigan	7,340,631
Connecticut	5,039,147
Indiana	3,916,998
Vermont	3,831,448
Maryland	3,296,348
Virginia	3,034,395
Illinois	2,442,504
Delaware	1,904,556
Oregon	1,530,449
West Virginia	1,298,066
Minnesota	1,145,818
California	640,027
Iowa	252,832
Kansas	202,290
New Jersey	122,920
All other states	7,055,760
Total	$188,715,189

It is interesting to note the relative value of this industry by sections of the country. Disregarding the values of the states having but one or two establishments, the value of the output in New England was $72,764,257; in the middle Atlantic states, adding Ohio and West Virginia, $73,679,449; in the middle West, $33,145,247; and in the Pacific states, $2,170,476. So it will be seen that the industry is nearly all confined to the northern part of the country, east of the Mississippi river.

The volume of the industry in detail for the whole country in 1904, compared with that of 1899, was as follows:

Number of establishments, 1904	761
Same, 1899	763
Decrease	2

Capital invested, 1904	$277,444,471
Same, 1899	167,507,713
Increase	$109,936,758
Salaried officials, clerks, etc., number, 1904	3,778
Same, 1899	2,935
Increase	843
Salaries, 1904	$6,097,032
Same, 1899	4,500,911
Increase	$1,596,121
Wage-earners, average, 1904	65,964
Same, 1899	49,646
Increase	16,318
Wages, 1904	$32,019,212
Same, 1899	20,746,462
Increase	$11,272,750
Miscellaneous expenses, 1904	$16,440,041
Same, 1899	10,184,106
Increase	$6,255,935

Materials Used.

Total cost of materials, 1904	$111,251,478
Same, 1899	70,530,236
Increase	$40,721,242
Domestic wood used, cords, 1904	2,473,094
Same, 1899	1,617,093
Increase	856,001

Cost of domestic wood, 1904	$15,953,805
Same, 1899	7,474,059
Increase	$8,479,746
Canada wood used, cords, 1904	577,623
Same, 1899	369,217
Increase	208,406
Cost of Canada wood, 1904	$4,847,066
Same, 1899	2,363,457
Increase	$2,483,609
Rags, including cotton and flax waste and sweepings used, tons, 1904	294,552
Same, 1899	234,514
Increase	60,038
Cost of rags, etc., 1904	$8,864,607
Same, 1899	6,595,427
Increase	$2,269,180
Old or waste paper used, tons, 1904	588,543
Same, 1899	356,193
Increase	232,350
Cost of old or waste paper, 1904	$7,340,335
Same, 1899	4,869,409
Increase	$2,470,926
Manila stock, including jute bagging, rope, waste, threads, etc., used, tons, 1904	107,029
Same, 1899	99,301
Increase	7,728

Cost of manila stock, etc., 1904	$2,502,332
Same, 1899	2,437,256
Increase	$65,076
Straw used, tons, 1904	304,585
Same, 1899	367,305
Decrease	62,720
Cost of straw, 1904	$1,502,886
Same, 1899	1,395,659
Increase	$107,227
Ground wood pulp, purchased, tons, 1904	317,286
Same, 1899	261,962
Increase	55,324
Cost of ground wood pulp, purchased, 1904	$5,754,259
Same, 1899	4,361,211
Increase	$1,393,048
Soda wood fiber, purchased, tons, 1904	120,978
Same, 1899	94,042
Increase	26,936
Cost of soda wood fiber, purchased, 1904	$5,047,105
Same, 1899	3,430,809
Increase	$1,616,296
Sulphite wood fiber, purchased, tons, 1904	433,160
Same, 1899	273,194
Increase	159,966

Cost of sulphite wood fiber, purchased, 1904	$16,567,122
Same, 1899	10,112,189
Increase	$6,454,933
Other chemical fiber, purchased, tons, 1904	6,278
Same, 1899	14,808
Decrease	8,530
Cost of other chemical fiber, purchased, 1904	$264,678
Same, 1899	465,255
Decrease	$200,577
All other stock, cost, 1904	$1,963,066
Same, 1899	817,075
Increase	$1,145,991
Chemicals and colors, cost, 1904	$8,365,305
Same, 1899	6,846,033
Increase	$1,519,272
Sizing, tons, 1904	52,171
Same, 1899, not reported	
Cost of sizing, 1904	$1,838,035
Same, 1899	826,245
Increase	$1,011,790
Clay, tons, 1904	201,218
Same, 1899, not reported	
Cost of clay, 1904	$2,096,570
Same, 1899	1,493,469
Increase	$603,101

All other materials, cost, 1904	$28,254,307
Same, 1899	17,042,683
Increase	$11,211,624

Products.

Total value of products, 1904	$188,715,189
Same, 1899	127,326,162
Increase	$61,389,027
News paper, tons, 1904	912,822
Same, 1899	569,212
Increase	343,610
Value of news paper, 1904	$35,906,460
Same, 1899	20,091,874
Increase	$15,814,586
Book paper, tons, 1904	515,547
Same, 1899	351,702
Increase	163,845
Value of book paper, 1904	$37,403,501
Same, 1899	24,870,951
Increase	$12,532,550
Fine paper, tons, 1904	146,832
Same, 1899	112,707
Increase	34,125
Value of fine paper, 1904	$22,249,170
Same, 1899	15,895,974
Increase	$6,353,196

Wrapping paper, tons, 1904	644,291
Same, 1899	535,252
Increase	109,039
Value of wrapping paper, 1904	$30,435,592
Same, 1899	24,542,373
Increase	$5,893,219
Boards, tons, 1904	520,651
Same, 1899	365,617
Increase	155,034
Value of boards, 1904	$16,959,557
Same, 1899	10,353,319
Increase	$6,606,238
Other paper, tons, 1904	366,553
Same, 1899	233,103
Increase	133,450
Value of other paper, 1904	$20,692,140
Same, 1899	12,154,555
Increase	$8,537,585
Ground wood pulp, made for own use, tons, 1904	695,576
Same, 1899	306,322
Increase	389,254
Ground wood pulp, made to sell as such, tons, 1904	273,400
Same, 1899	280,052
Decrease	6,652

Value of ground wood pulp, 1904	$4,323,495
Same, 1899	4,433,699
Decrease	$110,204
Soda fiber, made for own use, tons, 1904	66,404
Same, 1899	78,110
Decrease	11,706
Soda fiber, made to sell as such, tons, 1904	130,366
Same, 1899	99,014
Increase	31,352
Value of soda fiber, 1904	$5,159,615
Same, 1899	3,612,602
Increase	$1,547,013
Sulphite fiber, made for own use, tons, 1904	379,082
Same, 1899	144,452
Increase	234,630
Sulphite fiber, made to sell as such, tons, 1904	376,940
Same, 1899	271,585
Increase	105,355
Value of sulphite fiber, 1904	$13,661,464
Same, 1899	10,451,400
Increase	$3,210,064
All other products, value, 1904	$1,924,195
Same, 1899	919,415
Increase	$1,004,780

Equipment.

Paper machines, Fourdrinier, number, 1904.....	757
Same, 1899	663
Increase	94
Paper machines, cylinder, number, 1904.....	612
Same, 1899	569
Increase	43
Digesters, number, 1904.....	547
Same, 1899	426
Increase	121
Grinders, number, 1904.....	1,357
Same, 1899	1,168
Increase	189

PULP AND PAPERMAKING IN MAINE IN 1904.

From a Census bulletin on Maine manufactures we are enabled to here present in detail the volume of the pulp and paper industry in Maine in 1904, compared with that of 1899:

Number of establishments, 1904.....	37
Same, 1899	35
Increase	2
Capital invested, 1904	$41,273,915
Same, 1899	17,473,160
Increase	$23,800,755
Salaried officials, clerks, etc., number, 1904.....	350
Same, 1899	258
Increase	92

Salaries, 1904	$604,774
Same, 1899	445,348
Increase	$159,426
Wage-earners, average, 1904	7,574
Same, 1899	4,851
Increase	2,723
Wages, 1904	$3,966,200
Same, 1899	2,162,972
Increase	$1,803,228
Miscellaneous expenses, 1904	$2,257,950
Same, 1899	1,394,967
Increase	$862,983

Materials Used.

Total cost of materials used, 1904	$13,868,147
Same, 1899	7,118,945
Increase	$6,749,202
Domestic spruce used, cords, 1904	534,381
Same, 1899	265,359
Increase	269,022
Cost of domestic spruce, 1904	$3,853,380
Same, 1899	1,325,165
Increase	$2,528,215
Canadian spruce used, cords, 1904	27,754
Same, 1899	20,588
Increase	7,166

Cost of Canadian spruce, 1904	$241,491
Same, 1899	170,076
Increase	$71,415
Domestic poplar used, cords, 1904	104,964
Same, 1899	49,317
Increase	55,647
Cost of domestic poplar, 1904	$685,059
Same, 1899	199,377
Increase	$485,682
Canadian poplar used, cords, 1904	5,612
Same, 1899	539
Increase	5,073
Cost of Canadian poplar, 1904	$54,392
Same, 1899	1,716
Increase	$52,676
Other domestic wood used, cords, 1904	846
Same, 1899	6,544
Decrease	5,698
Cost of other domestic wood, 1904	$4,053
Same, 1899	21,757
Decrease	$17,704
Ground wood pulp, purchased, tons, 1904	60,132
Same, 1899	48,740
Increase	11,392

Cost of ground wood pulp, 1904	$937,741
Same, 1899	599,129
Increase	$338,612
Soda wood fiber, purchased, tons, 1904	12,813
Same, 1899	8,718
Increase	4,095
Cost of soda wood fiber, 1904	$532,544
Same, 1899	369,079
Increase	$163,465
Sulphite wood fiber, purchased, tons, 1904	34,020
Same, 1899	36,541
Decrease	2,521
Cost of sulphite wood fiber, 1904	$1,252,781
Same, 1899	1,061,125
Increase	$191,656
Other chemical fiber, purchased, tons, 1904	303
Same, 1899, not reported	
Cost of other chemical fiber, 1904	11,936
Same, 1899, not reported	
Chemicals, cost of, 1904	$1,554,509
Same, 1899	718,545
Increase	$835,964
Fuel and rent of power and heat, cost of, 1904	$1,894,160
Same, 1899	733,601
Increase	$1,160,559

All other materials, cost, 1904	$2,846,101
Same, 1899	1,919,375
Increase	$926,726

Products.

Total value of products, 1904	$22,951,124
Same, 1899	13,223,275
Increase	$9,727,849
News paper, tons, 1904	215,307
Same, 1899	122,738
Increase	92,569
Value of news paper, 1904	$7,721,864
Same, 1899	4,122,050
Increase	$3,599,814
Book paper, tons, 1904	67,397
Same, 1899	30,041
Increase	37,356
Value of book paper, 1904	$5,159,239
Same, 1899	2,660,211
Increase	$2,499,028
Fine paper, tons, 1904	4,400
Same, 1899, not reported	
Value of fine paper, 1904	$385,000
Same, 1899, not reported	
Wrapping paper, tons, 1904	89,818
Same, 1899	39,659
Increase	50,159

Value of wrapping paper, 1904	$4,075,497
Same, 1899	2,092,298
Increase	$1,983,199
Boards, tons, 1904	13,477
Same, 1899	14,843
Decrease	1,366
Value of boards, 1904	$523,568
Same, 1899	520,087
Increase	$3,481
Ground wood pulp, tons, 1904	64,480
Same, 1899	78,954
Decrease	14,474
Value of ground wood pulp, 1904	$922,206
Same, 1899	1,168,887
Decrease	$246,681
Soda fiber, tons, 1904	45,376
Same, 1899	32,956
Increase	12,420
Value of soda fiber, 1904	$1,773,899
Same, 1899	1,269,141
Increase	$504,758
Sulphite fiber, tons, 1904	58,261
Same, 1899	27,143
Increase	31,118

Value of sulphite fiber, 1904	$2,192,704
Same, 1899	1,390,601
Increase	$802,103
All other products, value, 1904	$197,147
Same, 1899, not reported	

PULP AND PAPER INDUSTRY IN MAINE IN 1906.

In order to secure the data for a report on this industry in our State the present year, a comprehensive blank, covering such points as we wished to investigate, was prepared and put into the hands of an experienced special agent who succeeded in getting the schedules filled for all the establishments engaged in the manufacture of pulp or paper, a very few only being incomplete. Some of the schedules were sent in by mail, but many of the plants were visited by the agent who secured a large amount of valuable detail information, a large part of which, owing to the limited size of our printed reports, we are obliged to omit.

The immense increase in the volume of this industry during the past two years is a matter of great surprise to us and no doubt will be to all who make the matter a study, but we cannot question the correctness of our schedules.

It is evident to all that this industry is developing the natural resources of Maine as perhaps no other industry has ever done. It is constantly adding wealth to our State, both to the operators and wage-earners, as well as to the merchants and other business men in the communities where the mills are situated. It is adding prosperity to many of our old settled towns and building up new towns in the wilderness. It is giving employment to thousands of our young men who otherwise might be obliged to seek a livelihood in distant parts of the country. It has no doubt been instrumental, to a large degree, in stemming the tide of emigration from Maine which, in the past, has carried such a large percentage of the brain and brawn of our rural communities to other states, much to the detriment of our own.

The farmer and the gardener, as well as the business man and the workman, feel the influence of the industry in the new

demand for produce, which adds much to their income, where formerly the most remunerative products of the soil, without a local market, were rendered almost valueless on account of their perishable nature.

The most serious problem in this industry is the question of a wood supply for the pulp mills. From the closest estimate we can make from a compilation of our returns it appears, after deducting the Canadian spruce and the edgings and other mill waste from the total amount used, that there was taken directly from the Maine forests the amount of 282,000,000 feet of spruce alone to supply these mills during the past year, and taking into consideration the fact that there are, at the present time, eight new pulp mills in process of construction in the State, it is very evident that the annual amount required will soon very easily reach 300,000,000 feet.

The latest United States Census figures put the amount of spruce sawed at all the lumber mills in Maine in 1904 at 449,192,000 feet. If this be a fair average we shall, in the immediate future, be draining our forests of 750,000,000 feet of spruce annually.

Forest Commissioner Edgar E. Ring, in his report of 1902, says: "From deductions made by Ralph S. Hosmer, field assistant of the United States bureau of forestry, who has been making experiments in this State during the past summer, and whose excellent report is published herewith, it is learned that the annual growth is sufficient to warrant the cutting of six hundred and thirty-seven million, (637,000,000) feet, of spruce timber in the State of Maine each year without depleting the supply."

A comparison of the above statement with the evident present cut of spruce in the State will indicate on which side of the danger line we are standing.

We have secured from Hugh J. Chisholm and Daniel McMaster two papers, prepared expressly for this article, which we have incorporated into this report; also a paper prepared by Austin Cary and delivered before the State Board of Trade at Bangor, in September of the present year. There are certainly no three men in our State better qualified to speak on the subjects of which they treat than these three men. Their papers

will add greatly to the value of this report on the pulp and paper industry of Maine.

Statistics of Pulp and Paper Mills.

We have compiled from our schedules the following statistics of the pulp and paper mills of Maine, arranged by towns in alphabetical order. We have here included all the mills in process of erection, but have separated them in our analysis of the statistics presented:

Anson (North).

The American Pulp, Paper and Lumber Company is constructing a pulp and paper mill at North Anson.

Auburn.

Leather Board Mill.

Address of company, Auburn Leather Board Supply Company, Auburn. Machinery used, three 500-pound beating engines, one 44-inch machine; power used, water; product, 2,000 pounds of leather board in 24 hours; number of employes, 18 men.

Augusta.

Pulp and Paper Mills.

Address of company, Cushnoc Paper Company, Augusta. Industry established, 1888, with additions in 1890, 1892 and 1896; power used, water, 1,000 horse power; steam, 200 horse power; pulp wood used, 5,000,000 feet of spruce annually; number of employes, men, 140; women, 12. Three plants.

Ground wood plant. Machinery used, four Scott and Robert grinders and two 80-inch wet machines; product, 12,000 pounds of ground wood pulp in 24 hours.

Sulphite plant. Machinery used, three Russell digesters, three 76-inch wet machines; product, 44,000 pounds of sulphite pulp in 24 hours.

Paper plant. Machinery used, six beating engines, three Jordan engines, one 86-inch Smith and Winchester and one 100-inch Rice, Barton and Fales Fourdrinier paper machines; product, 64,000 pounds of manila paper in 24 hours.

Baileyville (Woodland).

Pulp and Paper Mills.

Address of company, Saint Croix Paper Company, Woodland, Washington county. Industry established, 1905; power used, water, 6,000 horse power; steam, 2,600 horse power; electricity, 1,500 kilowatts or approximately 2,011 horse power; pulp wood used, 25,650,000 feet of spruce, and 1,350,000 feet of hemlock annually; number of employes, 300 men. Three plants.

Ground wood plant. Machinery used, sixteen grinders and four wet machines; product, 120,000 pounds of ground wood pulp in 24 hours.

Sulphite plant. Machinery used, two digesters and two wet machines; product, 120,000 pounds of sulphite pulp in 24 hours.

Paper plant. Machinery used, two 166-inch Pusey and Jones Fourdrinier paper machines; product, 160,000 pounds of news paper in 24 hours.

Belfast.

Leather Board Mill.

Address of company, Sherman and Company, Belfast. Machinery used, four 300-pound, one 500-pound, three 700-pound and two 800-pound beating engines, and three 42-inch machines; power used, water; product, 6,000 pounds of leather board in 24 hours; number of employes, 34 men.

Benton.

Pulp and Pulp Board Mills.

Address of company, United Box Board and Paper Company, Benton Falls. Power used, water, 1,500 horse power; pulp wood used, 384,000 feet of spruce annually; number of employes, 50 men. Two plants.

Ground wood plant. Machinery used, five grinders; product, 24,000 pounds of ground wood pulp in 24 hours.

Pulp board plant. Machinery used, six 700-pound beating engines, four Jordan engines, one 72-inch and one 90-inch cylinder paper machines; product, 24,000 pounds of wood pulp board in 24 hours.

Brewer.

Pulp and Paper Mills.

Address of company, Eastern Manufacturing Company, South Brewer. Industry established, 1889, with additions in 1895, 1902 and 1904; power used, steam, 450 horse power; electricity, 2,850 horse power; pulp wood used, 12,500,000 feet of spruce annually; number of employes, men, 480 in summer and 340 in winter; women, 40. Two plants.

Sulphite plant. Machinery used, two digesters, two grinders and four wet machines; product, 70,000 pounds of sulphite pulp in 24 hours.

Paper plant. Machinery used, twenty-two 1,200-pound and one 1,500-pound Emerson beating engines, two Emerson and four Wagg engines, one 100-inch, one 114-inch and one 116-inch Fourdrinier paper machines; product, 84,000 pounds of writing and book paper in 24 hours.

Brunswick.

The ground wood pulp board mill of the Androscoggin Pulp Company, with a capacity of 20,000 pounds of pulp board in 24 hours, was completely destroyed by fire April 7, 1906, and probably will not be rebuilt, but instead a new ground wood pulp mill is being constructed at South Windham in connection with the plant owned by this company at that place.

East Livermore (Livermore Falls).

Pulp and Paper Mills.

Address of company, International Paper Company, Livermore Falls. Industry established, February 12, 1898; power used, water, 1,729 horse power; steam, 341 horse power; pulp wood used, 1,767,000 feet of spruce annually; number of employes, 83 men. Two plants.

Ground wood plant. Machinery used, seven grinders and seven wet machines; product, 24,000 pounds of ground wood pulp in 24 hours.

Paper plant. Machinery used, seven beating engines, four refining engines, one 72-inch and one 91-inch cylinder paper machines; product, 38,000 pounds of wrapping and miscellaneous paper in 24 hours.

Ground Wood Pulp Mill.

Livermore mill. Address of company, International Paper Company, Livermore Falls. Industry established, July, 1905; power used, water and steam; pulp wood used, spruce; number of employes, 50 men. This is a new ground wood pulp mill which will be completed and commence operations late in 1906.

Enfield.

Ground Wood Pulp Mill.

West Enfield Mills. Address of company, International Paper Company, West Enfield. Industry established, February 12, 1898; machinery used, eleven grinders and eight wet machines; power used, water, 2,694 horse power; steam, 13 horse power; pulp wood used, 4,217,000 feet of spruce annually; product, 62,000 pounds of ground wood pulp in 24 hours; number of employes, 117 men.

Fairfield.

Soda Pulp Mill.

Address of company, United Box Board and Paper Company, Fairfield Division, Fairfield. Industry established, 1881; machinery used, five digesters and four wet machines; power used, water, 75 horse power; steam, 1,000 horse power; electricity, 30 horse power; pulp wood used, 5,000,000 feet of spruce edgings annually; product, 30,000 pounds of soda pulp in 24 hours; number of employes, 120 men.

Fairfield (Shawmut).

Ground Wood Pulp Mill.

Address of company, Shawmut Manufacturing Company, Shawmut. Industry established, 1871; machinery used, ten grinders and five 84-inch wet machines; power used, water and steam; pulp wood used, 3,500,000 feet of spruce edgings and 500,000 feet of other woods annually; product, 50,000 pounds of ground wood pulp in 24 hours; number of employes, 30 men.

Gardiner.

Pulp and Paper Mills.

Address of company, Hollingsworth and Whitney Company, Gardiner. Industry established, 1882, with additions in 1884 and 1902; power used, water, 1,200 horse power; steam, 1,000 horse power; pulp wood used, 850,000 feet of spruce annually; number of employes, men, 145; women, 15. Three plants.

Ground wood plant. Kineo mill. Machinery used, two grinders and two 74-inch wet machines; product, 12,000 pounds of ground wood pulp in 24 hours.

Paper plant. Aroostook mill. Machinery used, seven 1,000-pound beating engines, one Jordan engine and one 90-inch Fourdrinier paper machine; product, 30,000 pounds of manila and writing paper in 24 hours.

Paper plant. Cobbossee mill. Machinery used, eleven 1,100-pound Horne beating engines, two Jordan engines, one 94-inch Fourdrinier and one 62-inch double cylinder paper machines; product, 40,000 pounds of high-grade manila and writing paper in 24 hours.

Paper Mill.

Copsecook mill. Address of company, S. D. Warren and Company, Gardiner. Industry established, 1854; machinery used, two 400-pound, five 1,000-pound, one 1,400-pound and one 1,500-pound beating engines, one Marshall and two Jordan engines, one 84-inch and one 90-inch Fourdrinier paper machines; power used, water, 600 horse power; steam, 500 horse power; product, 50,000 pounds of book and magazine paper in 24 hours; number of employes, 88 men.

Gardiner (South).

Sulphite Pulp Mill.

Address of company, International Paper Company, South Gardiner. Industry established, February 12, 1898; machinery used, four digesters; power used, steam, 855 horse power; pulp wood used, 6,137,500 feet of spruce annually; product, 52,000 pounds of sulphite pulp in 24 hours; number of employes, 94 men.

Hollis.

A ground wood pulp mill is being constructed by the Publishers' Paper Company at Bar Mills, in the town of Hollis.

Howland.

Sulphite Pulp Mill.

Address of company, Howland Pulp and Paper Company, Howland. Industry established, 1891, with additions in 1899; machinery used, six New England digesters, four wet machines and one 112-inch Rice, Barton and Fales dryer; power used, water, 800 horse power; steam, 500 horse power; pulp wood used, 10,000,000 feet of spruce annually; product, 60,000 pounds of sulphite pulp in 24 hours; number of employes, men, 100; women, 1.

A paper mill is being constructed in connection with the above plant.

Jay.

Ground Wood Pulp Mill.

Address of company, International Paper Company, Jay. Industry established, February 12, 1898; machinery used, twelve grinders; power used, water, 2,271 horse power; steam, 19 horse power; pulp wood used, 2,568,500 feet of spruce annually; product, 38,000 pounds of ground wood pulp in 24 hours; number of employes, 38 men.

Jay (Chisholm).

Pulp and Paper Mills.

Address of company, International Paper Company, Chisholm. Industry established, February 12, 1898; power used, water, 10,481 horse power; steam, 3,695 horse power; number of employes, men, 451; women, 5. Two plants.

Ground wood plant. Machinery used, twenty-nine grinders and nineteen wet machines; pulp wood used, 8,210,000 feet of spruce annually; product, 120,000 pounds of ground wood pulp in 24 hours.

Paper plant. Machinery used, sixteen beating engines, eight refining engines, one 86-inch, one 98-inch, one 110-inch, two

120-inch, two 128-inch and one 132-inch Fourdrinier paper machines; product, 342,000 pounds of news paper in 24 hours.

A sulphite pulp mill is being constructed in connection with the above plant.

Jay (Riley).

Ground Wood Pulp Mill.

Address of company, International Paper Company, Riley. Industry established, February 12, 1898; machinery used, twenty-two grinders and seventeen wet machines; power used, water, 7,020 horse power; pulp wood used, 8,781,000 feet of spruce annually; product, 128,000 pounds of ground wood pulp in 24 hours; number of employes, 112 men.

Kennebunk.

Leather Board Mill.

Address of company, National Fiber Board Company, Kennebunk. Machinery used, two 250-pound and four 400-pound beating engines, and two 40-inch cylinder paper machines; power used, water; product, 5,000 pounds of leather board in 24 hours; number of employes, 28 men.

Lincoln.

Sulphite Pulp Mill.

Address of company, Katahdin Pulp and Paper Company, Lincoln. Industry established, 1894; machinery used, five digesters, one 112-inch Rice, Barton and Fales dry machine; power used, water, 200 horse power; steam, 1,200 horse power; pulp wood used, mostly edgings, equivalent to 11,000,000 feet of spruce annually; product, 70,000 pounds of sulphite pulp in 24 hours; number of employes, 75 men.

Lisbon (Falls).

Pulp and Paper Mills.

Address of company, Lisbon Falls Fiber Company, Lisbon Falls. Industry established, 1889, with additions in 1900; power used, water, 1,094 horse power; steam, 499 horse power; electricity, 10 horse power; number of employes, men, 165; women, 3. Two plants.

Sulphite plant. Machinery used, four digesters and four wet machines; pulp wood used, 8,970,000 feet of spruce annually; product, 70,000 pounds of sulphite pulp in 24 hours.

Paper plant. Machinery used, four 1,000-pound Horne engines, one 800-pound and one 1,000-pound beating engines, three Jordan engines, one 84-inch and one 104-inch Fourdrinier paper machines; product, 92,000 pounds of news paper in 24 hours.

Madison.

Pulp and Paper Mills.

Address of company, Great Northern Paper Company, Madison. Industry established, 1891, with additions in 1899; power used, water, 2,400 horse power; steam, 1,000 horse power; electricity, 1,000 horse power; pulp wood used, 20,000,000 feet of spruce annually; number of employes, 422 men. Three plants.

Ground wood plant. Machinery used, eight Holyoke machine grinders and five wet machines; product, 80,000 pounds of ground wood pulp in 24 hours.

Sulphite plant. Machinery used, ten Mitscherlich process digesters and five wet machines; product, 100,000 pounds of sulphite pulp in 24 hours.

Paper plant. Machinery used, two 136-inch Rice, Barton and Fales Fourdrinier paper machines; product, 100,000 pounds of news and bag paper in 24 hours.

Mechanic Falls.

Paper Mill.

Address of company, Poland Paper Company, Mechanic Falls. Industry established, 1887, with additions in 1894, 1898, 1902 and 1905; machinery used, sixteen 1,000-pound beating engines, one 68-inch, one 88-inch and two 90-inch Fourdrinier paper machines; power used, water, 1,700 horse power; steam, 1,400 horse power; electricity, 500 horse power; product, 80,000 pounds of book and writing paper in 24 hours; number of employes, men, 115; women, 20.

Millinocket.

Pulp and Paper Mills.

Address of company, Great Northern Paper Company, Millinocket. Industry established, 1899; power used, water, 22,000 horse power; steam, 3,200 horse power; electricity, 4,500 horse power; pulp wood used, 70,000,000 feet of spruce annually; number of employes, 800 men. Three plants.

Ground wood plant. Machinery used, sixty Holyoke Machine Company grinders; product, 600,000 pounds of ground wood pulp in 24 hours.

Sulphite plant. Machinery used, three Portland digesters; product, 200,000 pounds of sulphite pulp in 24 hours.

Paper plant. Machinery used, sixteen 1,500-pound beating engines and eight 152-inch Rice, Barton and Fales Fourdrinier paper machines; product, 600,000 pounds of news paper in 24 hours.

Nobleboro.

A new leather board mill is under construction in this town, estimated to cost $10,000, which will employ 75 hands.

Old Town.

Ground Wood Pulp Mill.

Address of company, Nekonegan Paper Company, Old Town. Industry established, 1900; machinery used, eight grinders and six wet machines; power used, water, 2,400 horse power; pulp wood used, 4,500,000 feet of spruce annually; product, 70,000 pounds of ground wood pulp in 24 hours; number of employes, 60 men.

Old Town (Great Works).

Soda Pulp Mill.

Address of company, Penobscot Chemical Fiber Company, Great Works. Industry established, 1882; machinery used, ten Continental Iron Works digesters, one 84-inch and one 118-inch dry machines; power used, water, 2,000 horse power; steam, 75 horse power; electricity, 50 horse power; pulp wood used, 13,500,000 feet of poplar annually; product, 110,000 pounds of soda pulp in 24 hours; number of employes, 190 men.

Orono.

Pulp and Paper Mills.

Address of company, Orono Pulp and Paper Company, Bangor. Industry established, 1891, with additions in 1893; power used, steam, 800 horse power; electricity, 1,000 horse power; number of employes, men, 175; women, 7. Two plants.

Sulphite plant. Machinery used, five Portland digesters and three wet machines; pulp wood used, 10,000,000 feet of spruce annually; product, 70,000 pounds of sulphite pulp in 24 hours.

Paper plant. Machinery used, four 900-pound and one 1,500-pound beating engines, two Jordan engines, one 100-inch and one 110-inch Fourdrinier paper machines; product, 54,000 pounds of manila, wrapping and bag paper in 24 hours.

Pulp and Paper Mills.

Address of company, International Paper Company, Orono. Industry established, February 12, 1898; power used, water, 2,688 horse power; steam, 377 horse power; number of employes, 117 men. Two plants.

Ground wood plant. Machinery used, eight grinders and eight wet machines; pulp wood used, 2,700,500 feet of spruce annually; product, 40,000 pounds of ground wood pulp in 24 hours.

Paper plant. Machinery used, two 1,000-pound and two 1,400-pound beating engines, two Jordan engines, one 96-inch and one 110-inch Fourdrinier paper machines; product, 46,000 pounds of news paper in 24 hours.

Poland (East).

Pulp Board Mill.

Address of company, National Fiber Board Company, East Poland. Industry established, 1879, with additions in 1883, 1889 and 1904; machinery used, eight 400-pound, three 500-pound and two 2,000-pound beating engines, three 42-inch and two 48-inch cylinder paper machines; power used, water, 400 horse power; steam, 100 horse power; electricity, 185 horse power; daily product, 8,000 pounds of thick paper for electrical work and shoe stiffenings, also for trunk, case and box making; number of employes, men, 40; women, 1.

Rumford (Falls).

Pulp and Paper Mills.

Address of company, International Paper Company, Rumford Falls. Industry established, February 12, 1898, with additions in 1899 and 1900; power used, water, 10,736 horse power; steam, 4,136 horse power; pulp wood used, 44,163,000 feet of spruce annually; number of employes, men, 685; women, 5. Three plants.

Ground wood plant. Machinery used, twenty grinders and eighteen wet machines; product, 136,000 pounds of ground wood pulp in 24 hours.

Sulphite plant. Machinery used, eight digesters and twelve wet machines; product, 258,000 pounds of sulphite pulp in 24 hours.

Paper plant. Machinery used, twenty-three beating engines, nine refining engines, one 86-inch, one 100-inch, two 110-inch, one 120-inch, two 125-inch, one 135-inch and one 162-inch Fourdrinier paper machines; product, 318,000 pounds of news and manila paper in 24 hours.

Pulp and Paper Mills.

Address of company, Oxford Paper Company, Rumford Falls. Industry established, 1901; power used, water, 3,800 horse power; steam, 2,000 horse power; electricity, 900 horse power; pulp wood used, 28,000,000 feet of poplar, 22,400,000 feet of spruce and 9,600,000 feet of fir annually; number of employes, men, 825; women, 35. Three plants.

Sulphite plant. Machinery used, five digesters and three wet machines; product, 160,000 pounds of sulphite pulp in 24 hours.

Soda plant. Machinery used, five digesters and three wet machines; product, 180,000 pounds of soda pulp in 24 hours.

Paper plant. Machinery used, twenty-six 1,600-pound beating engines, six refining engines, one 118-inch, one 124-inch, one 128-inch, one 138-inch, one 147-inch and one 148-inch Fourdrinier paper machines; product, 280,000 pounds of manila, book, label, coating and envelope paper in 24 hours.

Skowhegan.

Ground Wood Pulp Mill.

Address of company, Skowhegan Pulp Company, Skowhegan. Industry established, 1888; machinery used, three grinders and three wet machines; power used, water, 1,500 horse power; pulp wood used, 3,000,000 feet of spruce annually; product, 40,000 pounds of ground wood pulp in 24 hours; number of employes, 45 men.

Solon.

Ground Wood Pulp Mill.

Address of company, International Paper Company, Solon. Industry established, February 12, 1898; machinery used, twelve grinders and nine wet machines; power used, water, 3,323 horse power; pulp wood used, 3,545,000 feet of spruce annually; product, 54,000 pounds of ground wood pulp in 24 hours; number of employes, 67 men.

Standish.

A ground wood pulp mill is being constructed by the Publishers' Paper Company at Steep Falls in this town.

Topsham.

Paper Mill.

Address of company, Bowdoin Paper Manufacturing Company, Topsham. Industry established, 1868, with additions in 1883; machinery used, three 450-pound, four 500-pound, three 600-pound and two 1,000-pound beating engines, four Jordan engines, one 70-inch Harper, one 64-inch cylinder, one 84-inch and one 94-inch Fourdrinier paper machines; power used, water, 828 horse power; product, 60,000 pounds of news paper in 24 hours; number of employes, men, 75; women, 9.

Pulp and Paper Mills.

Address of company, Pejepscot Paper Company, Pejepscot. Industry established, 1893, with additions in 1895 and 1898; power used, water, 8,400 horse power; steam, 650 horse power; electricity, 10 horse power; number of employes, men, 196; women, 2. Two plants.

Ground wood plant. Machinery used, sixteen grinders and ten wet machines; pulp wood used, 7,934,000 feet of spruce annually; product, 104,000 pounds of ground wood pulp in 24 hours.

Paper plant. Machinery used, six 1,500-pound beating engines, two Jordan engines, one 124-inch and one 144-inch Fourdrinier paper machines; product, 130,000 pounds of news paper in 24 hours.

Township A, Range 7, W. E. L. S.

The Great Northern Paper Company is building mills in this township at Burnt Land and Dolby rips, where will be manufactured ground wood pulp, sulphite pulp, and paper. The capacity will be 280,000 pounds of paper in 24 hours.

Westbrook.

Pulp and Paper Mills.

Address of company, S. D. Warren and Company, Cumberland Mills. Industry established, 1854, with additions nearly every year since; power used, water, 2,000 horse power; steam, 3,000 horse power; electricity, 4,000 horse power; number of employes, men, 900; women, 150. Two plants.

Soda pulp plant. Pulp wood used, 15,000,000 feet of poplar annually; product, 120,000 pounds of soda pulp in 24 hours.

Paper plant. Three paper mills. Machinery used, sixteen 400-pound, seventeen 800-pound, fifteen 1,000-pound, four 1,200-pound and two 2,000-pound beating engines, sixteen refining engines, one 40-inch, one 56-inch, two 68-inch, one 80-inch, one 82-inch, one 84-inch, one 90-inch, one 96-inch, one 119-inch and one 145-inch Fourdrinier paper machines; spruce pulp is bought from other mills and used to the extent of from 40 to 50 tons daily; product, 220,000 pounds of book paper in 24 hours.

Windham (South).

Pulp and Pulp Board Mills.

Address of company, Androscoggin Pulp Company, South Windham. Industry established, 1875, with additions in 1906; power used, water and steam, amount not stated; number of employes, 65 men. Two plants.

Ground wood plant. Machinery used, seven New England grinders, one Friction Pulley and Machine Company grinder, and three wet machines; pulp wood used, 1,750,000 feet of spruce, 1,000,000 feet of poplar and 1,000,000 feet of pine annually; product, 50,000 pounds of ground wood pulp in 24 hours.

Pulp board plant. Machinery used, two 1,000-pound and three 1,600-pound Horne beating engines, four Jordan engines and two 72-inch five-cylinder paper machines; product, 65,000 pounds of pulp board in 24 hours.

A second ground wood pulp mill is being constructed in connection with the above plant.

Winslow.

Pulp and Paper Mills.

Address of company, Hollingsworth and Whitney Company, Waterville. Industry established, 1893, with additions in 1900 and 1905; power used, water, 6,274 horse power; steam, 3,250 horse power; electricity, 1,944 horse power; pulp wood used, 30,000,000 feet of spruce annually; number of employes, men, 575; women, 50. Three plants.

Ground wood plant. Machinery used, nineteen grinders and sixteen 74-inch wet machines; product, 150,000 pounds of ground wood pulp in 24 hours.

Sulphite plant. Machinery used, five digesters and six 74-inch vacuum wet machines; product, 150,000 pounds of sulphite pulp in 24 hours.

Paper plant. Machinery used, twenty-five 1,200-pound Horne beating engines, three Jordan engines, two 136-inch and one 158-inch Fourdrinier paper machines; product, 230,000 pounds of high-grade manila paper in 24 hours.

Yarmouth (Yarmouthville).

Soda Pulp Mill.

Address of company, Forest Paper Company, Yarmouthville. Industry established, 1874, with several additions since; machinery used, two Pusey and Jones welded digesters, three Harrison Loring digesters, one 66-inch and one 118-inch cylinder drying machines; power used, water, 125 horse power; steam, 1,200

horse power; pulp wood used, 16,800,000 feet of poplar annually; product, 140,000 pounds of soda pulp in 24 hours; number of employes, men, 250; women, 1.

Analysis.

An analysis of the returns received at our office, covering the volume of the pulp and paper industry in Maine for the year 1906, shows a very large increase over that of 1904, the year covered by the United States census taken in 1905.

The amount of spruce wood entering into the manufacture of pulp in the mills of our State in 1906 was 334,527,500 board feet, against 281,067,500 feet in 1904 and 142,973,500 feet in 1899, the year covered by the United States census taken in 1900.

The amount of poplar used in 1906 was 74,300,000 feet, against 55,288,000 feet in 1904, and 24,928,000 feet in 1899.

The amount of other woods used in 1906 was 12,450,000 feet, against 423,000 feet in 1904, and 2,272,000 feet in 1899.

The total amount of all kinds of wood used in 1906 was 421,277,500 feet, against 336,778,500 feet in 1904, and 170,173,500 feet in 1899.

As indicated above the amount of spruce made into pulp in Maine during the year 1906 was, in round numbers, 334,000,000 feet. Our returns show that 20,000,000 feet of this was Canadian spruce which, being deducted, leaves 314,000,000 feet of Maine spruce. Our returns also show that, of the Maine spruce used, 32,000,000 feet were edgings and other sawmill waste which, being deducted, shows that 282,000,000 feet represent the amount of spruce cut from the timber lands of our State, to go direct to the pulp mills.

The number of men employed in the pulp and paper mills of Maine in 1906 was 8,250, against 7,253 in 1904, and 4,560 in 1899.

The number of women employed in 1906 was 356, against 317 in 1904, and 291 in 1899.

The total number of employes in 1906 was 8,606, against 7,570 in 1904, and 4,851 in 1899.

The item of total wages paid in 1906 was $4,820,268, against $4,052,919 in 1904, and $2,162,972 in 1899.

The value of the product in 1906 was $34,617,666, against $22,951,124 in 1904, and $13,223,275 in 1899.

The returns from Belfast and Kennebunk, where water power only is used, and from Fairfield (Shawmut) and Windham (South), where both water and steam power are used, all failed to give the number of horse power used. With the exception of the four above indicated establishments, the total power used in all the pulp and paper mills in the State was, water, 107,238 horse power; steam, 34,060 horse power; electricity, 18,990 horse power; a total of 160,288 horse power.

There are now in use, in the active pulp and paper mills of the State, 282 grinders, 85 digesters, 72 Fourdrinier paper machines and 21 cylinder paper machines.

During the year 1906 the manufacture of pulp and paper was carried on in 38 different establishments within the State. Of these establishments 7 made ground wood pulp only, 3 made sulphite pulp only, 3 made soda pulp only, 3 made leather board only, 1 made pulp board only, 3 made paper only, 5 made ground wood pulp and paper, 3 made sulphite pulp and paper, 1 made soda pulp and paper, 2 made ground wood pulp and pulp board, 6 made ground wood pulp, sulphite pulp and paper, and 1 made sulphite pulp, soda pulp and paper. At one establishment 2 paper mills were run, and at another 3.

Ground wood pulp was made at 20 of these establishments, sulphite pulp at 13, soda pulp at 5, paper at 19, pulp board at 3, and leather board at 3.

Pulp, in its different forms, was manufactured at 31 of these establishments. Of this number, 14 made ground wood pulp only, 6 made sulphite pulp only, 4 made soda pulp only, 6 made ground wood and sulphite pulp, and 1 made sulphite and soda pulp. The daily output of these 31 mills was 1,940,000 pounds of ground wood pulp, 1,424,000 pounds of sulphite pulp, and 580,000 pounds of soda pulp, a total of 3,918,000 pounds.

There are 25 establishments with 28 mills where paper in its various grades was manufactured, including pulp board and leather board. Three of these mills made leather board, 3 made pulp board, and 22 made paper. On our returns the paper product is not very finely classified, some showing two or more kinds without specifying the amount of each, and others lumping their product as miscellaneous. We are able to make only the following classification of the daily output of these 28 mills:

News paper, 1,430,000 pounds; manila paper, 294,000 pounds;

book paper, 270,000 pounds; news and manila paper, 318,000 pounds; book and writing paper, 164,000 pounds; news and bag paper, 100,000 pounds; manila and writing paper, 70,000 pounds; manila, wrapping and bag paper, 54,000 pounds; manila, book, label, coating and envelope paper, 280,000 pounds; wrapping and miscellaneous paper, 38,000 pounds; pulp board, 97,000 pounds; leather board, 13,000 pounds, a total of 3,128,000 pounds.

NEW PULP AND PAPER MILLS.

Outside of the pulp and paper mills included in the above analysis there are, under construction, ground wood pulp mills in East Livermore (Livermore Falls), Hollis (Bar Mills), Standish (Steep Falls) and Windham; a sulphite pulp mill in Jay (Chisholm); a leather board mill in Nobleboro; a paper mill in Howland; a ground wood pulp and paper mill in Anson (North); a ground wood pulp, sulphite pulp, and paper mill in Township A, Range 7, West from the East Line of the State, this township being on the Penobscot river, between Millinocket and Medway, a total of 8 pulp mills and 4 paper mills. Three of these pulp mills and one of the paper mills are being built in connection with plants already established, and five pulp mills and three paper mills will be included in five new establishments.

When the above mills are completed our State will have 39 pulp mills and 32 paper mills comprised in 43 separate establishments.

NEW MILL ON THE ST. CROIX.

While pulp and paper mills have existed for many years upon the Androscoggin, Kennebec, and Penobscot rivers, the year 1906 saw the starting of the first pulp mill upon the St. Croix, the eastern boundary of Maine. Doubtless much more is known by the general public in regard to the storage capacity and water powers upon what are termed our three principal river systems, than of the St. Croix.

Wells, in his Water-Power of Maine, classes the latter among the primary river systems of the State, the others being the Saco, Androscoggin, Kennebec, Penobscot and Saint John; all other rivers in the State being classed as secondary systems.

From the same author we cull the following facts relating to the St. Croix: The length of the St. Croix basin is 70 miles,

and its width 50 miles. The total area is 1,175 square miles, 800 square miles being in Maine, and 375 in the province of New Brunswick.

The river is formed by two branches, the northern or eastern, and the western, called respectively the Chiputneticook and the Kennebasis. The combined surface of the principal lake reservoirs connected with the east branch is given as 58.25 square miles, and that connected with the west branch, 75.90 miles, a total of 134.15 square miles. In this connection Mr. Wells says:

"The lacustrine system of the St. Croix is of really remarkable development even for this State, and as contrasted with average lake districts of equal extent elsewhere in the country, or in other countries, may justly be regarded as quite extraordinary. The north branch of the river for a half of its length is a continuous lake, highly elongated, and with its irregularities of form simulating the windings of a river. The west branch through five-sixths of its length is likewise lake, broken somewhat into separate members, and branching out into many connected ponds. So that the river might almost justly be described as a lake in motion."

The fall from the lower lake on the east branch, to the tide, a distance of 54 miles, is 382 feet, being an average of 7 feet to the mile. The fall from Grand lake, on the west branch, to the tide, is 271 feet, an average of 6.3 feet to the mile.

Including the smaller ponds "the sum total of lacustrine surfaces in the system is estimated not less than 150 square miles, or one square mile to each 6.5 square miles of basin. A proportion so remarkable places the St. Croix at once and without controversy in the foremost position amongst the large rivers of the State as a manufacturing stream, so far as respects natural reservoirs, and in proportion to its magnitude and its area of basin."

The new pulp mill referred to is in the town of Baileyville, at Sprague's falls on the St. Croix, although the village which has grown up about the mill is known as Woodland, but this local village should not be confounded with the town of Woodland in Aroostook county. The plant was constructed by the St. Croix Paper Company, the work beginning in the spring of 1905.

The natural fall of the river at this point is 25 feet, and the dam, which is built at the head of the falls, is 1,825 feet in length and of an average height of 27 feet, is 6 feet wide at the top, slopes 9 inches to the foot, and is built entirely of concrete. The total water power used is 6,000 horse power, besides 2,600 horse power of steam, and 2,000 horse power of electricity.

The mill buildings are of brick, over 4,000,000 bricks entering into their construction. The grinder room is 172 by 54 feet; the generator room, 54 by 36 feet; the wet machine and wood room, 154 by 55 feet; the beater room, 145 by 52 feet; the blow pit, 74 by 44 feet; the digester house, 74 by 33 feet; the acid plant, 100 by 50 feet; the machine room, 233 by 80 feet; the repair shop, 80 by 42 feet; the finishing room, 164 by 80 feet; the boiler house, 163 by 64 feet; the store house, 100 by 60 feet, and the office, 80 by 54 feet.

The wood used is spruce and hemlock, about 5 per cent only being hemlock. The annual consumption is about 27,000,000 feet. The company owns 250,000 acres of timber land, a considerable part of which lies in New Brunswick, so the wood supply will not all come from Maine.

The daily output of the plant is 60 tons of ground wood pulp, 60 tons of sulphite pulp, and 80 tons of news paper. Fully 300 hands are employed, and the crews work on eight-hour shifts. The Washington County Railroad has built a spur track, three-fourths of a mile in length, from its main line to the plant, with suitable station buildings near the mill.

The land near the plant is finely adapted to building purposes, as it rises gradually from the river for a considerable distance. Streets have been constructed, sixty or more dwelling houses have been built, also three stores, two churches and a school-house.

HISTORY OF PAPERMAKING IN MAINE, AND THE FUTURE OF THE INDUSTRY.

Contributed by Hugh J. Chisholm, President of the International Paper Company.

The history of papermaking in Maine is said to have begun in 1731, when Samuel Waldo, a Boston merchant and large Maine land owner, contracted to build and lease a paper mill on the Presumpscot river, at Falmouth. At about the same time a Colonel Thomas Westbrook built a paper mill at Stroudwater, also in Falmouth, but information as to both ventures is meager.

Several years previous to this, in 1728, an act to encourage the manufacture of paper in New England had been passed by the general court of Massachusetts and a patent granted to a certain Daniel Henchman and associates, for the sole manufacture of paper for ten years. It would seem as though Waldo and Westbrook must have purchased the right to manufacture paper of Henchman, as his right was exclusive and Maine was then a district of Massachusetts.

The growth of the industry in Maine was not very rapid apparently, the next venture not being until early in the last century,* and indeed, it is within a generation only that Maine has begun to rank among the leading paper manufacturing states of the country. This new prominence has been due to her water powers and forest wealth.

In the course of the 19th century there were two circumstances that gave great impetus to papermaking, an art which, up to 1800, had not been improved to any material extent since the middle ages.

First, about the beginning of the century, a mechanical method of making paper in a continuous web, instead of by hand in sheets, was found when a Frenchman, named Roberts, invented the Fourdrinier machine.

Second, in the latter half of the century, a substitute for rags, then the chief raw material, was found in wood fiber. The use of wood for this purpose had probably been suggested early in

* I am indebted to Mr. George W. Hammond of Yarmouthville for these historical facts.

the 18th century, but it was more than 100 years later that the diminishing supply of rags stimulated persistent attempts to utilize wood in papermaking. In 1826 some papermakers in Turin, Italy, used the thin bark of the poplar, willow, and other kinds of wood as raw material for papermaking and in 1833 an Englishman was granted a patent for making paper and pasteboard from wood reduced to a state of paste. Poplar was considered best for this purpose. In 1855 an English patent was granted for improvements in the application of the inner bark of various trees to the manufacture of paper pulp. In 1862 samples of paper made from wood pulp mixed with rags, were exhibited at London, the wood having been rubbed down into pulp against the rough face of a wheel. Five years later, at Paris, a machine invented by a German, Herman Voelter, for grinding wood into pulp, was exhibited and it was upon a similar machine, especially imported, that mechanically ground pulp was first produced in this country in 1867, at Stockbridge, Massachusetts. This first American ground wood pulp was produced at the rate of about one-half ton daily and sold for eight cents per pound. It was pressed into cakes by a hand process and shipped in barrels to the paper mill which used it.

About this same time experiments were first made in grinding pulp in Maine, one having been carried on at Steep Falls at Norway, but probably the first mill to manufacture ground wood pulp in this State on a commercial basis was that started in 1868 or 1869 in the basement of a sawmill at Topsham, by Messrs. Charles D. Brown and E. B. Denison. The first grinders that these gentlemen used were the Taft grinders made, unless I am mistaken, at the Bath Iron Works. The patents were purchased of General Hyde. The daily product was about one ton in 24 hours and the product sold for about seven cents per pound, with small lots bringing, in certain cases, as high as nine cents. Mr. Brown has told me that he recalls that Mr. Denison would fit the wood and keep the books and then they would take turns running the wet machine. Mr. Brown attended to selling the product.

In 1870 they organized the Androscoggin Pulp Company, probably the oldest pulp company in the State, which in a few years owned or controlled mills at Brunswick, Skowhegan, Saccarappa, Paris, Norway and Great Falls, at all of which

places were used the Taft machines for reducing the wood to pulp. Each mill had two run of stones and the total production for the company was about twelve tons of pulp in 24 hours. In 1872 "pulp-boards" were patented by Messrs. Brown and Denison, and the Androscoggin Pulp Company took up the manufacture of paper box boards.

Other ground wood enterprises followed those of the Androscoggin Pulp Company in the course of time but we should consider them small affairs now, and there were none that made mechanical pulp on a large scale until in 1888 the Otis Falls Pulp Company began operations. This company's plant at Otis Falls, in the town of Jay, set an entirely new standard and revolutionized the industry in Maine. Its large hydraulic development was along the latest and most approved lines and in one room of the company's plant, which was constructed throughout in the most thorough manner, between four and five thousand horse power was developed and used, and fifty to sixty tons of pulp produced in 24 hours.

At about this time plans were being perfected for the development of another large water power, one in fact which, when fully developed, would be the largest east of Niagara and greater than those of Lewiston, Lowell and Lawrence combined, and which would in time make the village of Rumford Falls, which sprang into being at the development of the power, the leading paper manufacturing center of Maine. From the winter of 1882, when I first saw the Androscoggin river tumbling over Rumford falls, dropping 180 feet in all in the course of a half mile, and appreciated the latent power and the possibilities which lay in its development, it was eleven years before I had acquired the 1,100 acres of land which were considered necessary to control the falls and give the necessary flowage rights. In the meanwhile, however, plans for the best possible development were decided upon and in 1890 the Rumford Falls Power Company was formed. A year later railroad connection was established by the extension of the Portland and Rumford Falls Railroad from Gilbertville, in the town of Canton, and the power development of the middle canal was practically finished. Besides this, the power company had constructed a dam and large boom above the falls, capable of holding from 15,000,000 to 20,000,000 feet of logs for use by the Rumford Falls Paper

Company which had almost completed a $500,000 pulp and paper mill with a daily capacity of fifty tons of ground wood pulp and sixty tons of paper. The Rumford Falls Sulphite Company had also begun work on a large plant and would soon demand its share of the logs in the boom.

Early in 1894 one hundred tons of freight were passing daily to and from Rumford Falls, and the monthly payroll for labor employed at the paper, pulp and sulphite mills, amounted to over $25,000. Electric lighted streets had been made, two miles of water mains and half a mile of sewers had been laid, three bridges had been built, churches, schoolhouses, stores, and many dwellings had sprung up, and a thriving community stood where a few years before had been a sleepy hamlet in a farming community.

Six years later the Oxford Paper Company selected Rumford Falls as the location of its fine new plant for the manufacture of sulphite and soda pulp and fine book papers, and the Rumford Falls Power Company had completed the development of power from the lower canal. At about this time also, the Continental Paper Bag Company started operations. Its plant now has a productive capacity of 20,000,000 to 25,000,000 bags daily. Rumford Falls is at present producing about 300 tons of paper daily.

The chemical processes for manufacturing wood pulp were almost contemporaneous with that of making ground wood. The sulphite process, invented by a German, in the sixties, was first produced commercially in this country in Providence in 1884. Its development has been slow, owing to the difficulty in finding a durable digester lining.

I believe the first sulphite mills in Maine were those of the Eastern Manufacturing Company at South Brewer, which began operations in the latter part of 1889; the Orono Pulp and Paper Company, which started a few months later; the Cushnoc Fiber Company, in 1889; the Lisbon Falls Fiber Company, early in 1890; the Richards Paper Company at South Gardiner, in January, 1890; the Howland Falls Pulp Company, in May, 1891; and the Manufacturing Investment Company, in the latter part of 1891. The ruling price for sulphite during this time, up to 1894, was from 2¼ to 2½ cents, with fluctuations from 3 cents to as low as 1¾ cents. The number of mills, it will be seen,

increased rapidly after a start had been made, and my friend, Mr. Nathaniel M. Jones, to whom I am indebted for some of my facts, figures that in July, 1893, the total daily output of sulphite by Maine mills was over 100 tons, (200,000 pounds), nearly ¼ of the total product of the United States and exceeded only by the output of New York and of Wisconsin. At that time the sulphite mills at Rumford Falls and Lincoln were in process of erection.

The soda process is older than either the sulphite or mechanical and was first introduced by Hugh Burgess in England in 1854 and patented by him in this country the same year. It came into extended use earlier than sulphite fiber, though the use of the latter has since surpassed it. In Maine, the first soda pulp mill was that established in 1872 at Yarmouthville, in the town of Yarmouth, by H. M. Clark, Homer F. Locke and Henry Furbish. It was later sold to S. D. Warren and George W. Hammond. The Cumberland mills began to make soda fiber in 1880.

Today the paper produced at the Cumberland mills is known throughout the world and ranks with the best in the grades made. These mills have profited by progressive and able management and occupy a leading position in the development of the art of papermaking. On the occasion of a visit, several years ago, to one of the largest Austrian mills making fine papers, the general manager said to me that I need not go out of my own State to find a paper mill model in every respect, and that the Cumberland mills were, in his estimation, second to none in the world.

The ever increasing scarcity of rags and the high prices prevailing for them aided the general adoption of the new raw material and with its introduction Maine began to be a prominent factor in paper manufacturing. It is probably true that paper can be made from almost any vegetable fiber, the only real question being as to the commercial practicability of using this or that wood or plant. Maine's exceptionally large forest area gave her an advantage that has not been neglected.

But wood pulp was not for a number of years accepted as the coming paper fiber and its introduction was viewed with no little contempt by many. An English trade paper as late as 1874 said: "Great endeavors have been made to introduce wood pulp

as a fiber, but practical papermakers deem it a failure. Two kinds are in general use, mechanically prepared and chemically prepared. The great fault of the first is its weakness—after all it is mere sawdust. The chemically prepared seems a good fiber, but its price, at twenty pounds wet, or thirty-six pounds dry, per ton, is sadly against its use." Our own Paper Trade Journal in 1873 discussed the "Coming Fiber," whether straw or wood, leaning in favor of the former. One argument against wood fiber has a familiar sound: "Already," says the writer, "a cry has been raised at the destruction of our forests." So it is evident that this has always been a popular cry and though great quantities of wood have been cut for pulp making, people have not always stopped to consider that far greater quantities have been cut for lumber.

A recent bulletin issued by the United States Department of Agriculture gives the amount of wood cut in the United States for pulp as about 4 per cent of the annual production of lumber and its value as about 3 per cent of the total lumber value. How accurately this represents the conditions in Maine, I am not prepared to say. In a very thorough report published by State Forest Commissioner Ring in 1902 he gives the estimated present (then) stand of merchantable spruce in the State, that is, nine inches in diameter breast high, as 21,239,000,000 board feet. The annual increase, as deduced from experiments made by an assistant in the United States Bureau of Forestry, varied from two to four per cent. Reckoning the increase at 3 per cent on an average, Mr. Ring found that 637,000,000 feet could be safely cut each year without decreasing the actual stand. With improved methods in the cutting and management of forests, Mr. Ring was of the opinion that the percentage would gradually increase to at least 4 per cent. Mr. Ring said then: "Taken as a whole, I fail to discover that there is any indication of a decrease in the supply of spruce in the State on account of the pulp and paper industry," and later, "It may reasonably be asserted that the saw mills and pulp mills combined are not consuming more timber than the total annual increase." Mr. Ring stated that of Maine's 31,500 square miles of territory, 21,000 were forest land, and while 9,471,050 acres have been taxed by the board of State Assessors as wholly wild land, this did not include all the lumber-producing land of the State.

Almost all of the pulp wood cut in Maine at that time had been taken from the drainage areas (representing an acreage of 4,741,000) of the three great rivers. Thus, from at least one-half of the entire wild land region, no pulp wood of any consequence had ever been removed. I use the facts contained in the above mentioned report as representing the present situation, because Mr. Ring has personally told me (October, 1906) "I know of no reason why I should change my mind in reference to the estimates as to the stand of spruce in Maine and the annual growth and consumption made in my report for 1902. I think the figures on the stand of spruce at that time were very conservative. * * * I believe that the average (annual growth of spruce) throughout the State will equal 3 per cent, provided careful cutting is carried on and forest fires are kept out," and he adds "I am glad to say that the owners of wild lands are, as a general thing, cutting their tracts with more care, but there is still a great deal of wasteful cutting."

A census bulletin issued in September, 1906, by the Department of Commerce and Labor at Washington, gave Maine's consumption of domestic spruce for pulp making in 1905, as 534,381 cords, which is equivalent to 267,190,500 feet. On the basis of Mr. Ring's 1902 figures this leaves as much more to be cut for lumber, without going beyond the annual increase.

It is a common fallacy, and one that seems to appeal strongly to alarmists everywhere, that papermakers have become public enemies by their destruction of the country's forests. A little thought would convince these people that no one can be more vitally concerned in the preservation of our forests than these selfsame manufacturers of paper, and a little investigation will show that enough lumber is destroyed by fire and fungus every year in this country to supply all its pulp mills. The safety of our forest wealth lies in those conservative methods of woodland cutting and management which are everywhere becoming more general, and in constant watchfulness against fire and the prompt employment of the necessary means to quench it when discovered and prevent its spread. I am happy to say that great strides have been made in this direction by our forest commissioner, and constant watch for outbreak of fire is kept from several high points in the State during the spring, summer and fall. The system can well and profitably be extended, however.

The pulp wood contractor may be responsible for no little loss through careless cutting, but the campfire of the heedless hunter and fisherman has been the cause of many a conflagration that has meant enormous loss.

If careful study and scientific methods are so necessary and so prolific of good results in the case of our forests, it is most important also to paper manufacturers, as to other users of water power, that the question of water storage be given full consideration. In the establishment of storage reservoirs at the headwaters of our great streams, much has already been accomplished toward impounding the excess waters of the early spring for gradual use in the summer and fall droughts, but there is much more that can be done, and it is a subject in which the State government can very properly interest itself. I need not point out the advantages of an even stream flow and steady dependable water power the year round.

Today the paper industry is the most important single manufacturing pursuit in the State, the value of its product forming 15.9 per cent of the total value of products of the State in 1905. In 1900 the paper industry ranked third in the State and the value of its product was 11.7 per cent of the State total. Maine ranked third among the states of the Union as a paper producer in 1900 and has not since changed its position, though her output figured at 10.4 per cent of the country's total in 1900 and increased to 12.2 per cent in 1905. Massachusetts and New York alone outrank Maine. That the steady growth of the industry indicated by these figures is likely to continue we cannot doubt, when the constant building of new mills is considered. In this activity, however, there is always the menace of overproduction. The demand for paper is constantly increasing, it is true, but of late the supply has commonly outstripped it. The trouble is evidently not a new one, however, for an editorial in the Paper Trade Journal of January, 1874, commenting on the results of the year just passed, said: "The main lesson of the year is the cost of overproduction," so perhaps we are to expect this situation as part of the business. Another disturbing element is uncertainty as to how far the workmen in our mills will follow unwise leaders. The possible injury to our industry in this way is almost incalculable and no little burden rests on our newspapers to see to it that all workmen are fully advised of the

results of intemperate acts. I am not counseling rabid, anti-union utterances, but I am pointing out the wisdom of putting the one side of the question before the working man as clearly and forcibly as the other side is put at his union meetings. If he can be made to think instead of to follow blindly, the danger will be over.

But on the whole, in spite of these grave menaces, I am confident that Maine's paper industry will continue its prosperous growth, and that all her natural advantages of a healthy climate and wealth of forests and water power, will keep her well in the front rank of paper-making states.

CHEMICAL WOOD PULP AND PAPER—HOW MADE.

Contributed by Daniel McMaster, General Manager of the Oxford Paper Company at Rumford Falls, Maine.

When the poet Shakespeare, in the play of "As You Like It," put into the mouth of Orlando the words, "These trees shall be my books," he little thought of the gigantic nature of the prophecy he was unconsciously uttering, though the fulfillment has come about in a different way than was imagined by the love-lorn youth.

Trees now afford the raw material for our books, and one of the most extensive and most interesting features of the paper-making industry is the chemical treatment of wood, by which means it can be rendered fit for the production of high-class cellulose pulp and paper. In no branch of the paper-making industry is the variety of color, finish and texture more varied, and the skill and ingenuity of the papermaker are taxed to the uttermost to meet the increasing critical demands of the publisher, printer and lithographer.

The adaptations of chemically treated wood fiber are very large, and the varieties of paper possible to be made therefrom are exceedingly numerous and, taking it altogether, it can reasonably be said that the discovery of this chemical process has laid the foundation for our modern low-priced literature in all its varied phases. The volume of business in book paper manufacture is now only second to that of news paper manufacture, and certainly must be classed as at least equally important with that large and important industry.

The methods by which first-class book paper can be made from wood have been gradually evolved from a long series of experiments dating back to the time when Mr. Tilghman, of Philadelphia, first succeeded in manufacturing perfect pulp fibers from this material. During the succeeding years one improvement after another has been instituted and now a very high degree of perfection has been attained, and it is possible to produce from wood absolutely pure and exceedingly white pulps ready to be manufactured into the highest grades of book papers, and also quite a variety of grades of writing papers and envelopes.

For the production of pulp by chemical processes, the first point is the selection of the woods to be employed. These, in the State of Maine, consist chiefly of spruce, fir, poplar and somewhat small quantities of hemlock. In other states, where these better-class woods are not so prolific, the paper manufacturer falls back upon pine, birch, beech and a whole variety of woods of widely varying qualities which, through necessity, require to be pressed into the service. In the State of Maine, as already mentioned, the better classes of wood are alone used, that is to say, those woods rich in cellulose fiber and capable of being treated without any undue amount of severity, which would certainly injure the fiber, impair its strength and whiteness, and render it only suitable for the less valuable grades of book paper.

Preparing the Wood.

The chemical treatment of wood divides itself mainly into two distinct methods, namely, the sulphite process and the soda process. Up to a certain point the preparatory treatment of the wood is the same in both instances, that is to say, until the wood has been gotten into condition for chemical treatment in what is termed the "digester."

This preliminary preparation of the wood consists in the sawing of it into lengths of two feet, the removal of the bark by an ingenious apparatus on which revolving knives are fixed, the chipping of the wood, after barking, into pieces about ¾ of an inch square and 1-8 of an inch thick, and the screening mechanically of these chips so that they may, as far as possible, be free from sawdust and knots. It is the object of the papermaker to get these chips into the cleanest possible condition before the chemical treatment commences as, to a very large extent, the

cleanliness of his product will depend on the thoroughness with which such impurities as knots, bark and dirt have been removed in the mechanical treatment.

In the case of poplar wood, it may be said that it is customary to peel the trees in the woods during the springtime or early summer, so that in this case the operation of barking at the pulp mill is unnecessary. It is often quite customary also to peel a certain amount of the spruce and fir wood for the sake, amongst other things, of lessening freight expenses.

The Soda Process.

With regard to the chemical treatment, it will be necessary to divide this, as before indicated, into the two widely varying methods. Of these, the soda process is distinctly the simpler and will be taken first. By this method poplar wood is almost invariably cooked and, in the State of Maine, this holds, at present, as practically a fixed rule though, of course, the other woods may equally well be treated in the same fashion.

The basis of the soda process lies in the fact that sodium hydrate, commonly known as caustic soda, is a very powerful solvent for practically all of the constituents of the wood excepting a form of cellulose, and it is the object of the treatment to separate this cellulose or fiber from all other portions of the wood and retain it for the use of the paper manufacturer. In order to achieve this end the thoroughly cleansed chips are run into a cylindrical steel vessel known as the "digester." These vessels have to be made enormously strong and it is also of the greatest importance that no leaky joints should occur at any part of them. This being the case, it is now customary to have the digesters made entirely of welded steel, thus obviating the leakages so common in riveted vessels when used for the soda process. One convenient form of this cylindrical digester is a vessel of about 40 feet in length by 9 feet in diameter. This is filled absolutely full with the wood chips, and at the same time there is run into it a solution amounting to about 1,200 to 1,250 cubic feet of caustic soda at a strength suitable for the complete softening of the wood and the separation of the cellulose fiber. The strength of this caustic soda varies in different mills and is dependent on other considerations, such as the length of time

during which the pulp is cooked, and the temperature and pressure employed in the cooking process.

When the digester has been filled with wood chips and caustic soda liquor, a strong iron lid is bolted down on top of it and steam is turned on so as to rise from the bottom to the top of the digester through the entire body of chips. This steam pressure is gradually raised until from 100 to 125 pounds per square inch is reached, and at that it is maintained for about nine to ten hours. During the cooking some steam is continually blown off in order to induce circulation of the contents of the digester and to enable the highest temperature, consistent with the pressure of the steam, to be attained. This is called "relieving," and is a most important part of the treatment.

When the expert attendant of the process, known as the "cook," has decided that the operation is at an end, he opens a valve at the bottom of the digester and the pressure of steam inside drives out the whole contents of the digester into a suitable vessel known as the "blowtank." This blowing off under high pressure has also the result of breaking up the softened wood into a sponge-like mass of pulp. This pulp is very dark in color and is mixed with the blackened caustic liquor used in cooking.

By means of a series of fine perforations in the bottom of the blowtank, the black, spent, caustic liquor is drained away from the pulp and the latter is ready for the processes of washing, screening and bleaching. The washing of the pulp is quite a simple matter and consists in running hot water down through the mass until all traces of the black, spent, soda liquor have been drained away. The pulp is now of a buff color and is ready for screening.

This process of screening is necessary in order to remove all knots that failed to be separated in the treatment of the uncooked chips, likewise any uncooked fibers and dirt. To effect this screening, the pulp is very largely diluted with water and then floated along a wide trough which permits of the settling out of a large amount of the impurities; the pulp continues to float while the impurities settle to the bottom.

The screening proper is carried out by causing the fibrous liquid to pass through slotted brass or bronze plates, they being completely covered with these slots which are so fine that in

perfect screening they are only nine-thousandths of an inch wide. After passing through the screen the cleansed fibers are removed from the large body of water used in the foregoing process by a simple arrangement of separation through finely woven wire cloth, and the pulp is run into suitable tanks, there to be bleached to a fine white color.

The bleaching is effected by mixing the pulp with bleaching solution prepared from hypochlorite of lime, commonly termed "bleaching powder." The bleaching action is accelerated by the application of steam heat and, in about six hours' time, the pulp, if it has been properly cooked and washed, becomes of an excellent color and can readily be seen to be capable of being used in the production of paper of superior shade and texture.

It has been previously pointed out that, after the emptying of the digesters, the black, spent, caustic liquor is drained away from the pulp. This is not wasted. It is evaporated down to a highly concentrated condition and then burned in a furnace specially adapted for the purpose. The result of this burning of the liquor is the formation of a black ash containing the soda used in the cooking process, and this ash has only to be extracted with hot water and boiled with lime in order to restore it to its previous condition as caustic soda. The process is thus continuous and the same portion of soda is used over and over again a great many times, and the large amount of vegetable matter coming from the wood, contained in the liquor, makes the burning to ash very easy and the consumption of fuel small. During this cycle of recovery operations about 15 per cent of the soda is lost and has to be replaced with new caustic soda.

The Sulphate Process.

A modification of the soda process is one called the sulphate which, though not in use in this country, is nevertheless employed quite extensively in the Scandinavian countries of Europe, and in Germany. The manner of conducting the operations is precisely similar to that of the soda process, but the chemical composition of the liquor used in cooking is somewhat different. It involves the use of sodium sulphate which, to a very large extent, replaces the caustic soda. This, when used in conjunction with the recovery process by burning the

spent liquors, becomes sodium sulphide, and it is this particular substance that gives it its distinctive characteristics.

The Sulphite Process.

The second great subdivision of the wood pulp chemical processes is known as the sulphite process. In this case the operations are decidedly more complicated than those in the soda process, much more care and skill have to be exercised, and greater wear and tear of plant occurs than in the soda process. In this case the liquor employed for cooking the wood chips is usually a mixture of bisulphite of lime and bisulphite of magnesia, though in a great many instances bisulphite of lime alone is used.

When this process first came into being, manufacturers and inventors were overwhelmed by the great difficulty of conducting the cooking operations under pressure with a liquid which is so corrosive in its action on iron and steel vessels, and for many years it seemed as if the process must languish owing to the want of an economical method of protecting the digesters so that they would be acid proof during the violent operation of cooking.

The liquid usually employed is made by passing sulphur dioxide gas either through a solution of milk of lime and magnesia, or by causing it to attack limestone in large vertical towers over which water is continually running. The combination between the sulphur dioxide gas and the lime produces the compound bisulphite of lime, and the combination with magnesia is precisely similar, that is to say, it produces bisulphite of magnesia, and the occurrence of both these alkaline earths together, in cooking, is usually caused by the occurrence of limestones that happen to contain both lime and magnesia.

In order to produce the sulphur dioxide gas all that is necessary is to burn sulphur in properly constructed iron furnaces, and the resulting gases, which contain usually from 12 to 15 per cent sulphur dioxide, are pulled through the limy solution by means of vacuum pumps or exhausters.

The whole art of making these bisulphite liquors is quite complicated as, from the very beginning of the operation, the sulphur is apt to go off in a state of vapor without combining with

the oxygen of the air, and this gives a great deal of trouble by filling up the plant with raw sulphur when the gases become cool enough to condense it. Immediately on leaving the sulphur burners the gases have to be cooled down to nearly atmospheric temperature, and this is done by passing them through coils or lengths of lead piping which are immersed in water. The cooled sulphur dioxide gas readily attacks the lime that has been previously slaked and made into liquid, the result being a perfectly clear solution which contains something like 4 per cent total sulphur dioxide, 1.6 per cent of which is in conjunction with lime while 2.4 per cent is in a free or uncombined state.

This freshly made liquid is termed raw acid and, as a rule, is not immediately used in the digester. Before this is done it has blown into it quite a large amount of the relief products from previous digesters which are already cooking. These relief products consist of sulphur dioxide gas, water, and certain proportions of the liquid boiling over from the violence of the cooking in the digester working in full operation. This relieving into the raw acid produces the acid or liquor that is finally to be used for fresh chips, and it may be then of something like the following composition: Four per cent total sulphur dioxide—1.1 per cent sulphur dioxide combined with lime and 2.9 per cent sulphur dioxide in the free state.

This acid liquor is of an exceedingly pungent nature and great care has to be exercised during the entire manufacturing operations to see that as little of the gas escapes into the air as possible, as any leakages on an extended scale would make the work impossible for the employes, and at the same time cause great loss. When the digester has been filled with wood chips the acid liquor is run in, thereby filling the entire vacant space in the digester, and the whole is then closed down and steam put on to start the cooking operations.

In the case of the sulphite process, as has been said, it has been found necessary to devise some means by which the acid might be prevented from exercising its corrosive influence on the iron or steel constituting the digester. This, in modern times, has been gotten over by lining the entire insides of these vessels with acid-proof bricks, specially prepared for the purpose and thoroughly bedded in cement, so that a complete protection is afforded to the iron shell outside. The methods of lining these

digesters are well known to sulphite pulp manufacturers, and the whole operation is now vastly more simple than it used to be in the older experimental days when every conceivable kind of lining or composition of metals was tried.

In the sulphite process the cooking usually takes place during a period of from eight to thirteen hours, and the pressure does not, as a rule, become any higher than 80 pounds per square inch. During a considerable portion of the time while cooking, the digester is relieved by opening a valve at the top and letting out a certain proportion of the escaping gases and liquid. These escaping gases and liquid are, as already pointed out, eventually put back into the fresh liquor that has been manufactured from sulphur dioxide gas and lime, but before doing so, however, it is essential that they be cooled as nearly down to atmospheric temperature as possible.

By the time a " cook " has been completed the sulphur dioxide gas in the digester has been pretty nearly spent, and the expert workman judges whether the operations are finished by various chemical tests, and by taking samples from time to time. Having satisfied himself that it would be unwise or unnecessary any longer to continue the cooking, he blows out the contents of the digester by its own pressure in exactly the manner already described as being adopted in the soda process.

The pulp is blown into a large vessel, or a compartment called the blowpit. It is here drained of the spent liquor and thoroughly washed in order to free it from the products produced during the cooking treatment. Sulphite pulp, when cooked, differs considerably in color from that produced by the soda process. It is much whiter, and possesses finer and better fiber. After washing, this pulp is treated in exactly the same manner as soda pulp, that is to say, it is carefully screened, concentrated and bleached.

Bleached sulphite pulp, when all the operations have been properly conducted, is an excellent fiber for paper making, and is possessed of a very pure color so that it may be employed with great success, not only as an adjunct to the soda pulp for book papers, but alone, and mixed with rags or other ingredients, for the production of high-class grades of writing papers and envelopes.

Paper Making.

Having produced the finished pulps it remains for the paper manufacturer to step in and convert them into paper. The manner of doing this is decidedly difficult to explain in writing. It is eminently a process to be seen and not read about, and the investigator who is sufficiently curious or sufficiently desirous to learn, may find ample opportunity in the various paper mills of the State to gain a knowledge of this most interesting industry.

The first step in paper making is the beating of the pulp. This is an operation conducted with a view to drawing out the pulp into its finest fibers, thereby rendering it, on the paper-making machine, more capable of being shaken together or felted into a fine sheet without flaws and lumps. Not only does the beating of the pulp reduce the fiber in fineness, but it also has a certain chemical effect which makes the paper more tenacious and more amenable to being sized and colored.

The beating is conducted in a flat-bottomed, oval tank with a midfeather in the center. On one side of this midfeather is placed a hollow roll of iron about 4½ feet wide by 5 feet in diameter. This roll is provided with a large number of steel bars sharpened on the faces to a thickness of about 1-8 of an inch. The roll is caused to revolve at a speed on its surface of something like 1,700 feet per minute, and as it revolves it is gradually lowered into the trough of the beater until the edges of the bars just touch another set of bars placed in the bottom of the beater, and which are stationary. These bars in the bottom of the beater are set in what is called the bedplate, and the whole beating action takes place by the lowering of the roll provided with blades down on to this bedplate also provided with steel blades.

In the operation of beating, the pulp is mixed with a considerable quantity of water, so that it can move about freely and run round and round in the trough of the beater, so that every portion of the pulp eventually passes between the roll and the bedplate, thus giving the whole a chance to be beaten out and prepared to the degree of fineness called for by whatsoever class of paper is intended to be made. During the time of beating there are added to the pulp various sizing compositions, such as resin soap, alum, starch, etc., and at the same time any coloring

matter is also introduced to give the paper whatsoever tint the purchaser may have desired.

The time of beating may vary from two and one-half to five hours, according to the nature of the paper intended to be made, but this is an operation in which the papermaker exercises special judgment according to the particular requirements or demands of each order as it comes before him. Having been finally beaten, sized and colored, the pulp is let down from the beating engine into chests where it is kept to be pumped, as required, on to the paper-making machine.

The paper-making machine is essentially an evolved piece of mechanism, that is to say, it has been gradually built up from small things until today it has assumed the position of being one of the most interesting and complicated pieces of mechanism employed in the arts and manufactures. The basis of the machine consists in the fact that, when the watery mixture of fiber is run on to a cloth made of wire, the water will pass through the wire cloth and will leave the fiber on top. On this principle the paper-making machine was founded, the wire cloth taking the form of an endless belt stretched out flat and caused to run continuously round and round, thereby exposing always a fresh surface over which pulp is allowed to flow. These machine wires or endless belts of wire cloth, as they may be described, are often as large as 13 feet broad by 70 feet long, and the weaving of them is an art in itself, being a most expensive and tedious process.

In actual operation the paper-making machine is arranged so that the pulp diluted with water flows on to the moving belt in a level broad stream. As the belt or wire moves forward the water in the pulp flows through the meshes of the wire cloth, leaving a thin, even deposit on top, which is actually the paper.

In order to facilitate the removal of the water, suction pumps are employed, and presses are further used to get rid of the surplus water and to make the paper adhesive enough to be handled in a damp condition. As soon as the paper has been run over the wire and pressed it is led over a large number of iron cylinders internally heated by steam. These revolve at the same speed as the paper and dry out the remaining water, thus, at the end of the drying portions of a paper-making machine, the paper is delivered in a continuous roll and is, to all intents

and purposes, a finished article with the exception that it may be necessary to create a higher polish or surface, such surfaces being in continual demand by publishers and printers for high-class book and illustrated work.

In surfacing papers two distinct methods are usually employed and both of these have their peculiar modifications. For the ordinary run of bookwork the requisite "finish" is usually obtained before the paper leaves the paper-making machine. This is simply done by carrying the paper from the drying cylinders through one or more stacks of calender rolls made of chilled iron. These iron rolls are highly polished and their smooth surface, combined with their weight, flatten down the uneven surface of the paper, thus imparting to it a high degree of their own smoothness. To obtain yet a higher polish the paper is often passed through separate roll-calendering machines, called super-calenders. The surfaces obtained by this means are very smooth, and the paper is rendered eminently well fitted for high-class illustrated work.

In addition to roll-calendering appliances there is a method known as "plate glazing." This process involves the placing of the paper, in sheet form, between highly polished plates of copper or zinc in such a manner that each individual sheet of paper has a metal plate on either side of it. When a pile of these alternate sheets of paper and metal plates has been made the whole is rolled under heavy pressure between the heavy iron rolls of the plate-glazing calender, and the result is the production of a surface of most excellent texture and ivory character. This process is usually reserved for only the very highest class papers, as it is very expensive, yet the results are superior to those produced by any other method.

After the paper has been surfaced to the required degree it is cut into sheets of whatever size may be called for by the printer; or, if it is to be printed in rolls, it is only trimmed to the proper width and wound on to a metal core suitable for the printing press on which it is to be used. The machines for cutting and rewinding call for no special mention. They are exceedingly well adapted for the purposes in view, and are capable of cutting or trimming the paper very accurately.

When the paper has been cut into sheets it is counted out into "reams," usually of 500 sheets each, and is then carefully cased

up for transportation to its place of destination. In roll form highly calendered paper goes into very small space and it is quite common for papermakers to send rolls to market with well nigh four miles of paper on each roll.

In the case of postal-card paper the process of manufacture is precisely the same as for book or magazine grades. In this instance special precautions have to be adopted to have the "sizing" hard, the surface smooth, and the cutting very accurate. The printing of the United States postal cards is performed on a sheet of such large size that no less than 120 cards are produced on each. The apparatus for slitting these sheets, and again crosscutting them into single cards, is very ingenious.

The writer of this article desires once more to remind the student of our manufacturing industries that the process of pulp and paper making are full of minute details and special adaptations of machinery; and, for more extended information, he is referred to the various large enterprises in numerous parts of the State where the courtesy of the manufacturers has always enabled those who desire knowledge to obtain it in the best possible way.

MAINE FORESTS, THEIR PRESERVATION, TAXATION AND VALUE.

By Austin Cary,

Assistant Professor of Forestry at Harvard University.

As directly bearing upon the question of how best to conserve the supply of wood for the pulp mills of our State, we give place to the following able paper read before the State Board of Trade at Bangor, September 26, 1906:—

Government Ownership.

Mankind have found that it is a good thing for governments to own the forests of any country, or a portion of them, and to manage them in the interests of the whole people. The rule is a very old one and instinct doubtless first formulated it, but in later times, when scientific inquiry has been applied to the matter, strong reasons have been found for its adoption.

First of these is the effect forests exert on the general habitability and prosperity of a country through their influence on rainfall, winds, floods and droughts, water power and the

fertility of soil. This is a very important, also a very complicated subject. Science has not fully mastered it. The effect of forest denudation is known to vary greatly in different places. In general it is believed that it is a far-reaching and important one; that the preservation of a large percentage of area in forest is essential to the well-being of every great community.

Second is the value of forests as related to the health, recreation and aesthetic life of a people. Forest rests soil and forests rest men. The wilderness is the place to which men turn first and most confidently for recreation. The slow growth of the tree is the best tie between the restless human spirit and the patient, exhaustless forces of nature. The lakes and rivers of the wilderness, the mountains, and these all set in a sea of woods, together constitute perhaps the most elevating and inspiring object which we possess. Many perhaps do not appreciate this. Accustomed to it, we take it for granted and fail to see how different life would be if the wilderness were obliterated. But the experience of mankind at large bears testimony to the fact, and among ourselves, more and more are coming to see where our interest lies.

Third of the reasons why forests should at all costs be maintained, is the fact that they produce materials of great value to any civilized people. This is the aspect of the matter which appeals first and most directly to business men of Maine. It is also a matter which has been often called to their attention. You know well that the manufacture of forest products is, next to agriculture, the greatest industry of our State. You know too that in a multitude of ways forest products minister to the comforts of our people. As it is here, so it is with every civilized people,—forests contribute naturally to comfort, wealth and national independence. Consequently, in view of the destructibility of this great resource, in view, too, of the difference in yield there is between good and poor woods, between cared-for and neglected forests, civilized nations have found that for this reason as well as the others it is a good thing for the government of any country to retain the title to a large portion of its forest land in order to make sure that this great interest of the people shall not suffer.

We Americans, confident of ourselves and glorying in our vast possessions, have been but little mindful of the teachings of history and the example of others. Even the example of Canada at our own doors, following the old and well-tried rule, has made but little impression on us. Of the states of the Union only one awakened before its vast possessions had passed entirely into private hands. The national government, however, has aroused itself in time, and one hundred million acres in the West, devoted perpetually to occupation by forest and entrusted for management to a body of specially trained men, are the grand and satisfying results. That policy does not mean shutting up the resources of the country from the people. On the contrary, best and fullest use is the first principle of that policy, to which is added preservation.

During the early and formative period of our own State no such considerations as these were held in mind. The magnificent heritage of public land which Maine received on its separation from Massachusetts in 1820 never was held at a fraction of its true worth. The value of permanent forest was not understood, while the extension of farming was the one thing which was looked to as meaning industrial progress. Further, the State was weak as against individual interest and push. The public lands were looked on in part as an administrative burden, in part as an asset to be realized on in the shortest and most effective way. Successive legislatures vied with one another in devising means for getting rid of the burden and through a succession of land agents this great resource was sold at ridiculous figures, practically given away.

It is many years now since this process ceased because the public lands were all disposed of. So passed our first great opportunity in Maine.

There is no use in crying over spilled milk, however. What our fathers did we must abide by. On us it is incumbent simply to deal correctly with the conditions of our own time, to think clear and straight in order that in our day and generation no serious mistake be made.

Free Fishing and Hunting.

And first I call your attention to the fact that what I have said is not strictly and in all respects true. Our forefathers of the seventh and eighth generations, the men who founded the Plymouth and Massachusetts Bay colonies, and in so many ways formed the institutions of our present commonwealth, were men recently escaped from oppression.

Among other forms which this had taken were royal parks and game preserves, the monopolization of fish and game and the shutting up of natural scenery for the enjoyment of the few. They, with their experience fresh in mind, determined that in the commonwealth they were founding no such monopolization should take place, and in consequence they ordained that access to uncultivated land in the pursuit of fish and game should be forever free.

I call your attention pointedly to this matter because it is not clearly understood by the people at large, and because at the same time it is one of the most important points in our State forest policy.

Fishing and hunting on wild lands is a right of the whole people, a right ordained by our colonial ancestors and descended to us by inheritance. It has been tested in the courts and remains unimpaired. No land owner can shut the people out from access to the streams and lakes on his property. No proprietor can lease the hunting and fishing on his land or monopolize it for his own use. Such exclusive use of the land never was conveyed to him by the State with his title, but the right is reserved to the whole people. This arrangement, it should be remarked, is not the usual one in our commonwealths, but of the great forest-bearing states is almost peculiar to Maine.

The question now arises whether this arrangement is a good one in the conditions of our own times. Have the people appreciated this great right and privilege? Have they used and not abused it? Is its perpetuation consistent with the maintenance of the productive and protective efficiency of the forest? Particularly, does it permit the woods to be kept safe and in growing condition, able to yield their contribution of raw material to the industry of the State?

These are broad and searching questions. They cannot be adequately considered in a paper of this kind. Some of the points involved will be later touched on. For the present I will only say that, in my judgment, they should all be answered on the affirmative side.

Industrial Value.

So much for this branch of the subject. To return now to the woods in their industrial relation. We have in Maine an area of 31,000 square miles of which two-thirds, as near as is known, is covered with forests; a large share of that never can or should be devoted to agricultural use.

Nine million acres, or nearly one-half our total area, is outside of city, town and township organization and constitutes the so-called wild lands. The yearly cut of lumber in Maine approaches one billion feet. In volume of the lumber industry Maine stands about midway among the states of the Union. Her forests yield more wood to the paper industry than those of any other state. There is not a village within our borders that does not manufacture forest products in some form, and some of our most thriving towns are entirely dependent for prosperity on industries based on the forest. These are well-known facts, and the value to our people of our forest resources is clearly understood. What, however, does not always gain similar recognition is the fact that these industries and benefits, for their perpetuity, depend on growth. Our native stock of timber are one thing—we were generously endowed in this line—but native stocks come to an end and then our reliance must be on growth. Growth of the forest is the thing which we are bound to promote. What now are the conditions essential to growth? What, particularly, is necessary, from the direction of the State, in order to preserve this growing power and the benefits accruing from the yield of well-stocked, productive woods?

Control by Owners.

In this connection I care to mention but three things. These are, first, full control by owners; second, protection from fire; and third, low taxation.

First, as to control by owners. Under this head my purpose is simply to discredit the idea that the solution of the forest

problem, as that is presented to us, lies in the passage of State laws regulating cutting. Co-operation with the owner is all right—other states are doing much for better woods management by furnishing forest owners with such technical information and assistance as they may desire, but coercion of the owner is a different thing. Whatever may be necessary in the future, the time is not ripe for such legislation now. Laws for that purpose, if put on the statute books, would result only in evasion, failure and loss.

I speak of this especially because legislation of this character has often been spoken of as embodying the ideas of foresters. It does not do so. Genuine foresters do not support it. Forestry which appeals to the interests of the owner himself is what they are trying to work out.

Fire Protection.

Next we have the matter of protection from fire, a most important and fundamental thing. Forest fires not only destroy present values but they destroy the values of the future. This holds not only in relation to the young growth, in which is the hope of the early future, but of the soil as well, on which the yield of the land depends for all time to come.

At first thought it might seem that the owner's interest in his property should be a sufficient solution of this problem. But if this interest were always in evidence and always active and intelligent, the inference nevertheless would not be true. Fire is too big a thing to be handled in that way. Co-operation is necessary to combat it. Fire on one man's land threatens the property of another no less. A general system is necessary, of patrol especially, which will always be on the ground and command great resources in case of emergency. Furthermore, educational work is necessary, and irresponsible and evil-dispositioned men have to be controlled. The only adequate command of the situation to be had is through the action of the State.

And Maine has not been remiss in this matter. She was the second State in the Union to pass effective forest fire laws, and those laws she has supplemented with a good working organization. The last legislature showed its appreciation by

appropriating $10,000 a year for expenditure in this direction. In return for it Maine has a system of fire wardens covering the whole timberland country; warning notices are scattered throughout the wild lands, along every canoe route and trail; fire stations, well equipped for the detection of fires, are located on mountains in the midst of the wilderness, a system originating in Maine and promising great benefit to our timber land interests. As a result of these measures forest fires have greatly decreased, in respect both to numbers and severity. Over and over again the value of our expenditure is coming back to the State, and we must believe that this great interest will, in the future, be ever more liberally treated.

Taxation, from Standpoint of Foresters.

The matter of timber land taxation is not so generally or clearly understood, and it has been a subject of controversy. In considering this matter I shall endeavor to speak from two points of view and two only, as a citizen of the State and as a forester.

This matter is an important one. It has more bearings than are evident probably to anyone in this body. Forest taxation, however, is by no means a new problem, or one peculiar to the State of Maine. The countries of Europe have threshed it over as a matter of public policy. Our sister states have teaching for us in the way of both good and bad example. Foresters have studied it and written upon it because they saw the vital relation between taxation and the maintenance of productive forests.

Why is it that forest land requires peculiar treatment in regard to taxation, treatment different in principle from that, for instance, applied to farming land?

It is, for one thing, because of the long time required by the forest to produce a crop. A farm is capital on which annual return is received. Only one crop at a time is ever visible, and that, because it may be quickly consumed or removed, is seldom subject to tax. In the case of forests, however, 50 or 100 annual crops may be visible at one time and for purposes of taxation, as well as sale, be represented in the value of the land. Now, to tax wood at its full value, while it is maturing in the tree, 50

years at 2 per cent is to confiscate it. This, to be sure, is not a truly representative statement of the matter, but it will serve to bring out the fact which is true and important, that the ordinary system of taxation applied to growing woods may eat up a large share of the value of the crop. Similar taxation for farm and forest is not objected to as far as soil values are concerned, but in simple justice different principles ought to apply when it comes to the growing stock.

Another matter turns about this point, a matter of public policy and general concern. It is understood that what we want from our forest lands is that they should produce as largely as possible. Now this matter is tied up in the most intimate way with the amount of growing stock. The better stocked forest land is, within limits, the greater also is its yearly growth. On the other hand, if trees are cut at too small a size and growing stock thus cut down, growing power goes with it and so are sacrificed the interests both of the owner and the country.

How this matter may be affected by taxation will be better seen if we inquire a little into the nature of the growth.

A tree, financially considered, is a capital on which the growth accruing may be considered as interest. This accretion consists not only in size, but in quality and availability as well. When it becomes large the yearly growth, in proportion to the whole, is but small in amount. But still it is necessary that the tree should stand and grow through a portion, at least, of the later stage, if it is to reach the best merchantable size, and the land to yield its full product.

What is the rate of increase on growing timber, and how does the current rate of taxation relate itself to that? Ten years ago we were much in the dark on such questions, but in the intervening time the studies of foresters have given us a basis to go upon. A fair statement of the result of those studies in regard to spruce timber, which embodies the greater part of the present value of our wild lands, is that growth on trees of the moderate and critical sizes, all speculative elements being thrown aside, ranges from 4 to 7 per cent, just about the rate which conservative men look for as a return on money. Now if 2 per cent is taken out of this yearly in the way of taxation, the net return is thrown down so low that men looking at growth as an investment will not consider it. The result is cutting which, while it

reduces taxable value, knocks down at the same time the producing power of the land.

That is the form in which the matter presents itself to us now most pointedly. In time to come it must present itself in another form, in relation to the reforestation of lands. Natural reproduction, even assisted by management directed to that end, will not always suffice us. We ought to be hospitable to wholesale forest planting when the time for it comes. How is that affected by taxation?

A prominent member of the United States forest service has recently figured over this matter and, while large elements of the case are indeterminate, due to the fact that valuations vary so widely, the general conclusion which he arrived at is none the less striking for he shows that 2 per cent taxation, as usually applied, might readily eat up half or two-thirds of the total yield from the land.

Now, are these merely academic matters, incapable of wholesale illustration and proof? The Cleveland Cliffs Iron Company, for instance, an enlightened concern in Michigan, which employs trained foresters and wishes to improve, to the utmost, its great holdings of land, finds itself debarred from undertaking wholesale plantation because of local taxation averaging 3 per cent. The forests of whole states, indeed, have been sacrificed largely from this cause. In the State of Michigan, for instance, the township is not the municipal unit, but all land is subjected to local taxation and consequently at the mercy of often ignorant and shortsighted men. These local assessors, with a natural inclination to strike heavily at the property of corporations and non-residents, have been particularly zealous in taxing timber values while they were in sight. Such relentless pursuit compelled men to cut. Under the treatment received all conservative forces were broken down; timber was thrust upon the market at great financial loss to the people; no consideration was given to protection or to growth; great tracts of land stripped and then abandoned have reverted to the State; and the lumber business of the State is shrinking fast.

I do not mean to say that taxation alone is at the bottom of this. On the contrary there are many causes, natural and human, which have contributed to the result. But taxation has been, and is acknowledged to have been, a large element in the

case. The same is true of Pennsylvania, where the best informed men I know of say the white pine has been almost totally stamped out and the hemlock is following fast along the same road. The exigencies of the case that rich and progressive State is trying to meet by the acquisition of great forest reserves.

On the other hand, whatever may be the history of wild land taxation in Maine and whether or not we approve of it, as carried on at the present time, it seems to me that a just and broad view shows that Maine is much indebted to the fact that a great share of its forest lands have been outside the reach of municipal taxation. It has always been possible to hold land in Maine. Less frequently than in other lumbering states has timber been rushed on the market in haste, and regardless of the market considerations. Our forests have had a wholesome development, comparatively speaking, that has favored their growing capacity. In consequence, our cut has steadily increased and the value of our forest lands has never been so great as it is today. Here again other causes have contributed, but light taxation has had its part. Consequently, before we change the system under which we have so thriven, it behooves us to think carefully and dispassionately, so that no mistake may be made.

The situation, as regards the so-called wild lands, is briefly this, 9,000,000 acres of land in unorganized places, valued by the state assessors at nearly $29,000,000, of late years at the rate of 2½ mills, yield about $70,000 in taxes. These lands pay also county tax averaging, in the different counties, 1½ mills on the same valuation. In addition, some of the lands are assessed by the county commissioners for the maintenance of roads crossing them. These roads are sometimes a benefit to the land; sometimes they are maintained for the benefit of settlers and outsiders. Many tracts are not subject to this tax. In the aggregate it amounts to another mill on the whole valuation. Taxation admittedly bears very lightly on these lands. I do not believe it can be justly said that it has appreciably affected their management.

Taxation, from Standpoint of Citizens.

So much for the foresters' views. How now shall we view the situation as citizens? Do the wild lands bear their proper share of the public burdens? Should more tax be imposed on them in view of both justice and good public policy?

A very broad consideration of this subject seems to me essential. The history of values might be spoken of, the way in which, since these lands were purchased from the State, their value has increased in spite, frequently, of repeated cutting. Take a particular tract, for instance, that not long after the Civil War was bought from the State at auction for thirty-seven and three-quarters cents per acre, that a few years later was sold at the rate of $2.00 per acre, and that now, after extensive cutting upon it, could not, probably, be bought at ten times that rate. How shall we look at this matter as respecting the obligation of land owners to the State?

Men will claim, of course, that their own business foresight and energy entitle them to that profit and, in a measure, their claim is true. Certainly present owners of such property are not to be mulcted of it. But there is a larger sense in which the values thus represented are the creation of the community and of others. Men, not land owners, have built up enterprises calling for forest products. Invention has found new uses for those products, notably in the case of pulp and paper. Railroads have been built, in part at public expense, putting their property nearer the markets. Population in Maine and out of it has grown, increasing those markets. Labor, on which the exploitation of those lands depends, has been maintained, educated and kept in order. In short the wealth that, during the last twenty-five years, has been rolling in on those land owners is, in the truest sense, the creation of a growing, inventive, and law-abiding community. As it has been in the past, so will it be in the future. The maintenance of intelligence, prosperity and order, is the chief thing on which profit from those lands and the value represented in them, depends.

It is bad policy to mince matters in dealing with things of this kind. There are wild-land men who talk as if they thought they ought to be pensioned for the public service they render in holding and administering their properties. Personally, I never could see any reason for that. The value of their property is mainly the creation of the community, and its safety and the income derived from it is dependent on the community no less. While there are special advantages enjoyed by the cities and towns which the wild lands do not enjoy, the owners of those lands are as much concerned as anybody in the maintenance of

general prosperity and intelligence. Now general taxation and public expenditure is one way in which prosperity and intelligence are maintained.

I am free to say that I think the wild lands ought to pay more tax and my judgment is, further, that additional tax may be levied without materially affecting cutting policy or otherwise operating to the disadvantage of the State. It has already been brought out that one essential of a good system of forest land taxation is that owners should not be compelled to cut. In fact, with things standing as they do today, it would be a good thing if we could encourage a conservative policy.

As to method of taxation Europe furnishes us with one line of instruction which it is well at least to bear in mind, in that in all European systems the soil for purposes of taxation is separated from the growing stock. Whether we can apply their methods at all, in our country, is not clear. At any rate, the taxation of growing stock in Europe is regulated by a body of expert men, which we have not at command, and on principles which we are not ready to apply.

A scheme which is being considered in one or two other states is not to tax standing forests at all, but to take a percentage of the net stumpage value of all timber when cut. The advantage of this system is that a reasonable tax can be collected without compelling or encouraging owners to cut. The difficulty with it is that it will require considerable of an organization to carry it out.

It may be possible, however, without changing the familiar principles of our present law, to collect from the wild lands a larger rate of taxation than they now bear. The difficulties in the way, constitutional and other, are not for me to discuss, but simply outside that field to suggest possible lines of a just and permanent solution. Computation might be indulged in here, but in the end the whole thing would resolve itself into a matter of judgment. Personally, it seems to me that if we left county and road taxes as they are and doubled the State tax on wild lands, making the rate 5 mills instead of 2½, the arrangement would be a just and equitable one. That would place the wild lands on practically the same basis as the savings banks of the State, institutions toward which the State holds a similar encouraging attitude.

Just Valuation.

Lastly, we have with us now, and we shall always have with us, the problem of just valuation. In this connection we must remember that our timber lands are vast in extent, not easy of access, and that thorough knowledge of timber land values is not the possession of every intelligent man, but is a business by itself. With this held in mind it goes without saying that the men who represent the people in this important function ought to be well equipped for the work, not interested themselves on the land owner's side, and provided with the help required to enable them to get information at first hand.

Forests as a Public Possession.

This paper perhaps might best be brought to a close here, but I cannot relinquish my opportunity without adding a paragraph on a different line. These forests of Maine are one of the State's best possessions. Considered as a public charge they have been neglected and abused in the past, and it is largely by chance that they have come down to us in as good condition as they now are.

The attention of the people is now focused upon them. Popular interest is awakened, is seeking light and guidance, and this is a tendency to be heartily encouraged. These woods of Maine are not a private interest alone, but a public one as well. In connection with these, the people and the State have both rights and duties. The public obligation in respect to forest fires in the first place, is an imperative one and fortunately it is one generally recognized. The actual management of forest land is a subject which at some time in the future, as conditions change, the people, as a whole, must have their say about. Educational work and the investigation of important problems are always in order, and they are best maintained by the State. Above all, at the present time we ought, especially, to turn our attention to the rights of access which the people have, in pursuit of recreation and sport, to the uncultivated lands. We ought to realize the value of this possession. We ought to understand its bearings upon other interests and the general welfare. We ought to be in a position to say that, however it may be necessary to regulate it, and though possibly it might seem wise at some

future time to surrender it, at least it shall never be stolen or thrown away.

What I mean to encourage here is a positive and intelligent attitude on the part of the people and their representatives toward this great natural resource. By studying it carefully, by taking the steps now that need to be taken, we shall prepare ourselves to take such additional ones as may be necessary as circumstances arise.

Is it likely that these great interests will be well looked after? As a rule, in our country, it is considered that state interests have suffered and been weakly administered in comparison with the interests of private men. Has that been the case here? Is it so now? How will it be in the future?

The best assurance I can see in this matter consists in the record of two public agencies very familiar to us, the administration of fire laws by the forest commissioner, and the work of the fish and game commission. I am under obligation to neither, but I have been deeply interested in the work of both these commissions; as a boy and man I have known these woods, and it seems to me not to be disputed that the work of both is effective and sound. It is not perfect, of course, but nobody should expect that. The point is that in the name of the State and the interests of the people they have done very effective and valuable work. The lessening prevalence of forest fires during the past twenty years is a very noteworthy fact, and it is due mainly to education and the warden system. In the same period, while sport has been fully enjoyed, our stock of fish has been protected, and big game has multiplied in a wonderful way.

Credit for this belongs most evidently to the men who have devised and administered the laws, but it must also be attributed in large measure to the people themselves; for their perception of large interests, their amenity to reason, their willingness to exercise self restraint, realization of the purpose of the laws is largely due. I may overvalue it, but taken together it seems to me one of the best things which Maine, as a State, has done. I augur from it final success in handling other problems relating to our forests as they may arise.

MAINE RAILROADS.

The following table shows the number of employes (including general officers), in the employ of steam railroad companies in Maine, total wages and average daily compensation, on June 30, 1906, as compared with June 30, 1905.

Name of Road.	Number of employes, 1906.	Number of employes, 1905.	Total wages paid, 1906.	Total wages paid, 1905.	Average daily compensation, 1906.	Average daily compensation, 1905.
Bangor and Aroostook Railroad	1,698	1,401	$895,588 86	$756,375 01	$2 13	$2 08
Boston and Maine Railroad	859	885	585,486 77	593,245 36	2 11	2 08
Bridgton and Saco River Railroad*	46	46	22,300 80	21,205 18	1 61	1 61
Canadian Pacific Railway	358	754	301,615 78	306,053 14	2 27	2 00
Franklin and Megantic Railway*	49	57	23,008 99	25,714 27	1 65	1 65
Georges Valley Railroad	11	11	5,136 67	5,472 24	1 48	1 24
Grand Trunk Railway	695	674	429,551 74	394,483 18	1 93	1 91
Kennebec Central Railroad*	13	16	6,919 57	7,103 79	1 60	1 62
Lime Rock Railroad	66	43	27,199 60	23,548 28	2 01	2 03
Maine Central Railroad	3,916	3,800	2,238,150 80	2,171,087 30	1 95	1 92
Monson Railroad*	11	11	5,394 79	5,226 98	1 63	1 64
Phillips and Rangeley Railroad*	111	135	44,481 91	40,359 35	1 59	1 57
Portland and Rumford Falls Railway	326	307	167,210 84	148,532 92	1 90	1 86
Rumford Falls&Rangeley Lakes R.R.	88	81	41,523 35	41,231 35	1 74	1 67
Sandy River Railroad*	55	50	25,761 11	25,747 61	1 67	1 75
Sebasticook and Moosehead R. R.	41	43	10,607 31	10,116 55	1 38	1 38
Somerset Railway	99	80	49,540 63	43,084 01	1 78	1 79
Washington County Railroad	293	273	161,554 42	127,669 05	1 78	1 70
Wiscasset, Waterville & Farmington Railroad*	79	79	32,456 26	33,039 63	1 36	1 36
York Harbor and Beach Railroad	29	27	10,701 62	10,104 00	1 78	1 79
Totals and averages	8,843	8,773	$5,084,191 82	$4,789,393 20	$1 98	$1 93

*Narrow (two feet) gauge.

RAILROAD EMPLOYES AND WAGES.

Through the courtesy of the board of railroad commissioners we have been able to compile, from the returns made to it, information bearing upon the labor and wage question in this field of employment. The statistical information given covers the year ending June 30, 1906, compared with the year ending June 30, 1905.

The number of men employed, including general officers, upon steam railroads in Maine for the year ending June 30, 1905, was 8,773; for the year ending June 30, 1906, 8,843, an increase of 70. The number employed, excluding general officers, for the year ending June 30, 1905, was 8,710; for the year ending June 30, 1906, 8,781, an increase of 71.

The number of men employed, including general officers, upon street railways in Maine, for the year ending June 30, 1905, was 1,118; for the year ending June 30, 1906, 1,336, an increase of 218.

The number of men employed, including general officers, upon both steam and street railways, for the year ending June 30, 1905, was 9,891; for the year ending June 30, 1906, 10,179, an increase of 288.

The total number of days worked by those employed upon steam railroads, excluding general officers, for the year ending June 30, 1905, was 2,452,083; for the year ending June 30, 1906, 2,549,607, an increase of 97,524 days.

The total amount of wages paid employes on steam railroads, including general officers, for the year ending June 30, 1905, was $4,789,393.20; for the year ending June 30, 1906, $5,084,-191.82, an increase of $294,798.62. The total amount of wages paid employes, excluding general officers, for the year ending June 30, 1905, was $4,619,639.07; for the year ending June 30, 1906, $4,909,906.08, an increase of $290,267.01.

The total amount of wages paid employes on street railways, including general officers, for the year ending June 30, 1905, was $717,038.97; for the year ending June 30, 1906, $834,464.35, an increase of $117,425.38.

The total amount of wages paid on both steam and street railways, including general officers, for the year ending June 30, 1905, was $5,506,432.17; for the year ending June 30, 1906, $5,918,656.17, an increase of $412,224.00.

The average daily wages of those employed upon steam railroads, including general officers, for the year ending June 30, 1905, was $1.93; for the year ending June 30, 1906, $1.98, an increase of 5 cents. The average daily wages, excluding general officers, for the year ending June 30, 1905, was $1.88; for the year ending June 30, 1906, $1.93, an increase of 5 cents.

GROSS EARNINGS AND TRAFFIC ON STEAM RAILROADS.

The gross earnings and traffic of all railroads, whose mileage is wholly or partly in Maine, is made up first by the actual business of the roads operated wholly in Maine, and where roads are operated partly in Maine and partly outside of the State careful calculations are made as to the amount of business to be properly credited to this State, and this amount added thereto.

The conclusion arrived at shows that the gross earnings of steam railroads in Maine, for the year ending June 30, 1905, were $13,956,875.15; for the year ending June 30, 1906, $15,394,457.19, an increase of $1,437,582.04.

The number of passengers carried on steam railroads, during the year ending June 30, 1905, was 7,725,333; for the year ending June 30, 1906, 8,221,384, an increase of 496,051. The number of tons of freight hauled, for the year ending June 30, 1905, was 10,358,674; for the year ending June 30, 1906, 11,841,376, an increase of 1,482,702 tons.

The total passenger train mileage, for the year ending June 30, 1905, was 4,299,410 miles; for the year ending June 30, 1906, 4,457,947 miles, an increase of 158,537 miles. The total freight train mileage, for the year ending June 30, 1905, was 3,880,621 miles; for the year ending June 30, 1906, 4,320,050 miles, an increase of 439,429 miles. The total mixed train mileage, for the year ending June 30, 1905, was 474,683 miles; for the year ending June 30, 1906, 482,408 miles, an increase of 7,725 miles.

The total non-revenue train mileage, for the year ending June 30, 1905, was 1,388,222 miles; for the year ending June 30, 1906, 1,648,001 miles, an increase of 259,779 miles. The total train mileage of all trains, for the year ending June 30, 1905, was 10,042,936 miles; for the year ending June 30, 1906, 10,908,406 miles, an increase of 865,470 miles.

RAILROAD MILEAGE IN MAINE.

The total mileage of steam railroads in Maine on June 30, 1905, was 2,022.63 miles; on June 30, 1906, 2,093.49 miles, an increase of 70.86 miles. This gain was made by the construction of the Northern Maine Seaport Railroad, 54.13 miles; branch tracks upon the Portland and Rumford Falls Railway, 1.98 miles; an extension of the Rumford Falls and Rangeley Lakes Railroad, 2.37 miles; an extension of the Somerset Railway, 11 miles; additions to the Washington County Railway, 1.21 miles, and a change, by the same railway, of .17 of a mile.

The total mileage of street railways in Maine on June 30, 1905, was 380.45 miles; on June 30, 1906, 389.12 miles, an increase of 8.67 miles. The building of the Auburn and Turner Railroad, 8.50 miles, with slight additions to the Waterville and Fairfield Railway, and the Augusta, Winthrop and Gardiner Railway, make up this gain.

ACCIDENTS.

The total number of persons killed by the movement of trains on steam railroads, for the year ending June 30, 1905, was 42; of injured, 176, a total of killed and injured of 218. The total number of persons killed by the movement of trains on steam railroads, for the year ending June 30, 1906, was 38; of injured, 222, a total of killed and injured of 260.

Of the persons killed, during the year ending June 30, 1905, 19 were employes, none were passengers, and 23 other persons; of the injured for the same year, 91 were employes, 31 were passengers, and 54 other persons. Of the persons killed, during the year ending June 30, 1906, 17 were employes, 2 were passengers, and 19 other persons; of the injured for the same year, 136 were employes, 54 were passengers, and 32 other persons. For the year ending June 30, 1906, there was 1 passenger killed to 4,110,692 carried, and 1 injured to 152,248 carried.

The total number of persons killed upon street railways, for the year ending June 30, 1905, was 8; of injured, 79, a total of killed and injured of 87. The total number of persons killed

upon street railways, for the year ending June 30, 1906, was 7; of injured, 48, a total of killed and injured of 55. Of the persons killed, during the year ending June 30, 1906, none were employes, 3 were passengers, and 4 other persons; of the injured, 6 were employes, 37 were passengers, and 5 other persons.

REPORT

OF THE

Inspector of Factories, Workshops, Mines and Quarries.

STATE OF MAINE.

OFFICE OF INSPECTOR OF FACTORIES,
WORKSHOPS, MINES AND QUARRIES,
BIDDEFORD, DECEMBER 1, 1906.

To Hon. Samuel W. Matthews, Commissioner of Industrial and Labor Statistics:

In compliance with the requirements of Section 46 of Chapter 40 of the Revised Statutes, directing the Inspector of Factories, Workshops, Mines and Quarries to make a report to the Commissioner of Industrial and Labor Statistics on or before December first annually, I have the honor to herewith submit my second annual report.

Very respectfully,

GEORGE E. MORRISON,

Inspector.

REPORT.

LAWS.

The enlightened nations of Europe enact one law for the whole nation, leaving to the local authorities only the duty of enforcement.

Congress of the United States gives us protective measures for the benefit of our manufacturing industries, but leaves the protection of the children in the employ of these industries, to the state legislatures, and as a result, all states have made laws to meet their own requirements.

The duties of the inspector of factories, designated and regulated by acts of the legislature, are defined in chapter forty of the Revised Statutes, sections forty-three to fifty-eight inclusive, which are as follows:

Inspector of Factories, Etc.

Sec. 43. The governor, with the advice and consent of the council, shall appoint an inspector of factories, workshops, mines and quarries who shall hold office for two years, or until his successor is appointed, unless sooner removed. Said inspector shall inquire into any violations of sections forty-eight to fifty-six inclusive, of this chapter, and assist in the collection of statistics and other information which may be required, for the use of the bureau of industrial and labor statistics. Whenever the governor shall be satisfied that said inspector cannot perform all the duties of his office required by this section, in person, he shall, with the advice and consent of the council, appoint a sufficient number of assistant inspectors to assist him in so doing, who shall hold office for the term of two years, and act under the direction of said inspector, and shall receive the sum of two dollars a day and reasonable expenses while actually

engaged in duty. They may, at any time, be removed for cause by the governor. For the purpose of inquiring into any violation of the provisions of said sections forty-eight to fifty-six of this chapter, relating to the regulation of the hours of labor and the employment of women and children in manufacturing and mechanical establishments, and enforcing the penalties thereof, such inspector and assistants may, at all reasonable times, enter any such establishments and make investigation concerning such violations. Such investigation shall be conducted with as little interruption as possible to the prosecution of the business of such establishment. Whoever interferes with said inspector or his assistants, in the performance of their duties as prescribed in this chapter, shall be fined fifty dollars.

Sec. 44. The said inspector, upon complaint, shall inquire into, and prosecute for, any violations of sections fifty-seven and fifty-eight of this chapter, relating to the fortnightly payment of wages. He shall also examine into the sanitary condition of factories, workshops, mines and quarries, and when any condition or thing is found that, in his opinion endangers the health or lives of the employees, he shall notify the local board of health, and said board of health shall investigate the matter.

Sec. 45. He shall enforce the due observance of sections thirty-seven and thirty-eight of chapter twenty-eight, relating to the swinging of doors, and fire escapes in factories and workshops.

Sec. 46. He shall, on or before the first day of December annually, submit his report to the commissioner of industrial and labor statistics, and it shall be incorporated in, and printed with the annual report of the bureau of industrial and labor statistics.

Sec. 47. The expenses of the department, including all bills for the expenses of the inspector of factories, workshops, mines and quarries, and for the services and expenses of assistant inspectors, shall be paid on vouchers presented by the commissioner, after the same shall have been audited and approved by the governor and council.

Hours of Labor of Women and Children.

Sec. 48. No female minor under eighteen years of age, no male minor under sixteen years of age, and no woman shall be employed in laboring in any manufacturing or mechanical establishment in the state, more than ten hours in any one day, except when it is necessary to make repairs to prevent the interruption of the ordinary running of the machinery, or when a different apportionment of the hours of labor is made for the sole purpose of making a shorter day's work for one day of the week; and in no case shall the hours of labor exceed sixty in a week; and no male person sixteen years and over shall be so employed as above, more than ten hours a day during minority, unless he voluntarily contracts to do so with the consent of his parents, or one of them, if any, or guardian, and in such case he shall receive extra compensation for his services; *provided, however,* that any female of eighteen years of age or over, may lawfully contract for such labor for any number of hours in excess of ten hours a day, not exceeding six hours in any one week or sixty hours in any one year, receiving additional compensation therefor; but during her minority, the consent of her parents, or one of them, or guardian, shall be first obtained.

Sec. 49. Every employer shall post in a conspicuous place in every room where such persons are employed, a notice printed in plain, large type, stating the number of hours' work required of them on each day of the week, the exact time for commencing work in the morning, stopping at noon for dinner, commencing after dinner, and stopping at night; the form of such printed notice shall be furnished by the inspector of factories, workshops, mines and quarries, and shall be approved by the attorney general. And the employment of any such person for a longer time in any day than that so stated, shall be deemed a violation of the preceding section, unless it appears that such employment is to make up for time lost on some previous day of the same week, in consequence of the stopping of machinery upon which such person was employed or dependent for employment.

Sec. 50. Whoever, either for himself, or as superintendent, overseer or agent of another, employs or has in his employment any person in violation of the provisions of section forty-eight, and every parent or guardian who permits any minor to be so

employed, shall be punished by a fine of not less than twenty-five, nor more than fifty dollars for each offense. A certificate of the age of a minor made by him and by his parent or guardian at the time of his employment, shall be conclusive evidence of his age in behalf of the hirer, upon any prosecution for a violation of the provisions of section forty-eight. Whoever falsely makes and utters such a certificate with an intention to evade the provisions of this chapter relating to the employment of minors, shall be subject to a fine of one hundred dollars.

Sec. 51. Any person, firm or corporation engaged in any manufacturing or mechanical business, may contract with adult or minor employees to give one week's notice of intention on such employee's part, to quit such employment under a penalty of forfeiture of one week's wages. In such case, the employer shall be required to give a like notice of intention to discharge the employee; and on failure, shall pay to such employee, a sum equal to one week's wages. No such forfeiture shall be enforced when the leaving or discharge of the employee is for a reasonable cause. *Provided, however*, that the enforcement of the penalty aforesaid, shall not prevent either party from recovering damages for a breach of the contract of hire.

Sec. 52. No child under twelve years of age, shall be employed in any manufacturing or mechanical establishment in the state. Whoever, either for himself, or as superintendent, overseer or agent of another, employs or has in his employment any child in violation of the provisions of this section, and every parent or guardian who permits any child to be so employed, shall be punished by a fine of not less than twenty-five, nor more than fifty dollars for each offense.

Sec. 53. No child under fifteen years of age shall be employed in any manufacturing or mechanical establishment in the state, except during vacations of the public schools in the city or town in which he resides, unless absence from such school is excused by the superintending school committee or superintendent of schools, or teacher acting by direction of either, as provided by section forty-nine of chapter fifteen.

Sec. 54. Any parent or guardian who procures a child to be employed contrary to the preceding section, and any corporation, owner, superintendent or agent of the owner, of such establishment violating the provisions of said section, shall forfeit the

sum of one hundred dollars, one-half to the use of the county, and one-half to the use of the city or town where the offense is committed. Money so recovered to the use of the city or town, shall be added to its school money. School committees and superintendents of public schools, shall inquire into violations of said section and report the same to the county attorney, who shall prosecute therefor.

Sec. 55. Every owner, superintendent or overseer of any such manufacturing or mechanical establishment shall require and keep on file, a certificate of the age and place of birth of every child under sixteen years of age employed therein, so long as such child is so employed. Said certificate shall be signed by a member of the school committee of the place where such attendance has been had, or by some one authorized by such committee, and the form of said certificate shall be furnished by the state superintendent of public schools, and shall be approved by the attorney general. The inspector of factories, workships, mines and quarries, or either of his assistants, may demand the names of the children under sixteen years of age employed in such establishment, in the several cities and towns of the state, and may require that the certificates of age prescribed in this section, shall be produced for his inspection, and a failure to produce the same, shall be prima facie evidence that the employment of such child is illegal.

Sec. 56. Nothing in the eight preceding sections shall apply to any manufacturing establishment or business, the materials and products of which are perishable and require immediate labor thereon, to prevent decay thereof or damage thereto.

Fortnightly Payment of Wages.

Sec. 57. Every manufacturing, mining, quarrying, stone-cutting, mercantile, street railroad, telegraph, telephone and municipal corporation, and every incorporated express and water company, and any person or firm engaged in any of the above specified kinds of business, having in their employ more than ten persons, shall pay fortnightly each and every employee engaged in its business, except municipal officers whose services are paid for by the day, or teachers employed by municipal corporations, the wages earned by such employee to within eight

days of the date of said payment; *provided, however,* that if at any time of payment, any employee shall be absent from his regular place of labor, he shall be entitled to said payment at any time thereafter on demand.

Sec. 58. Any corporation violating any provision of the preceding section shall be punished by a fine of not less than ten, nor more than twenty-five dollars on each complaint under which it is convicted, *provided,* that complaint for such violation is made within thirty days from the date thereof. When a corporation against which a complaint is so made, fails to appear after being duly served with process, its default shall be recorded, the allegations in the complaint taken to be true, and judgment rendered accordingly. When judgment is rendered upon any such complaint against a corporation, the court may issue a warrant of distress to compel the payment of the penalty prescribed by law, together with costs and interest.

CHILD LABOR.

As a large part of the work of the inspector during the past year has been confined to the enforcement of the child labor law, I wish first to take up that subject, and as our laws for some time have remained unchanged, I think at this time a few changes could be made to better meet the requirements of the present conditions.

Many of the states changed their laws during their last legislative sessions, and today, where, in our own State, no child under the age of fifteen years shall be employed except during vacation or when otherwise excused by the superintendent of schools, we find a few states and territories that have no age limit, namely: District of Columbia, Indian Territory, Arizona, Nevada, Georgia, New Mexico, Hawaii and Oklahoma.

Three states have an age limit fixed at ten years, namely: Nevada, Alabama and Arkansas.

Fourteen states have the age limit fixed at twelve years, under certain conditions, namely: California (in vacation or if parent is disabled), Maine (in vacation), West Virginia, Alabama (except orphans and children between 10 and 12 years of widowed mothers or invalid fathers), Arkansas (except orphans and children between 10 and 12 years of widowed

mothers or invalid fathers), Louisiana (applying to boys), New Hampshire, North Carolina, North Dakota, Rhode Island (for children at work until December 31, 1906), South Carolina, Texas (if able to read and write), Vermont and Virginia.

Twenty-nine states have fixed the age limit at fourteen years, under certain conditions, namely: California, Connecticut, Illinois, Indiana, Massachusetts, Michigan, Minnesota (except in vacations), Nebraska (except in vacations), Oregon (except in vacations), New York, Ohio, Pennsylvania, Rhode Island, Washington (on account of poverty), West Virginia (during school term), Wisconsin (during vacation), Arkansas, Colorado, Delaware, Kansas, Kentucky, Louisiana, Maine, Maryland, Minnesota, Missouri, Texas, New Jersey and Tennessee.

On entering any one of our large cotton mills we find a large number of children, all working under the following certificate:

STATE OF MAINE.

CERTIFICATE.

.....190...

I, the undersigned, ... of ..... (street and number).....now in the employment of.....at....., and (parent or guardian) of said.....having personal knowledge of the fact, hereby certify that said..... was born at.....on the.....day of..... 189.., and is therefore now.....years of age.

.....

.....Parent or Guardian.

This Certificate is made and filed in accordance with the provisions of Chapter 40 of Revised Statutes.

Approved as to form,

HANNIBAL E. HAMLIN,

Attorney General.

CERTIFICATE.

.....190...

I, the undersigned, (superintendent of schools, superintending School Committee, or teacher acting by direction of either), in the town of.....do hereby certify that.....

now in the employment of.....has been excused from attendance at a public day school, as provided in Section 49 of Chapter 15 of the Revised Statutes.

.....

This Certificate is made and filed in accordance with the provisions of Section 49 of Chapter 15 of the Revised Statutes.

Approved as to form,

HANNIBAL E. HAMLIN,

Attorney General.

On one of my visits to a mill I found a large number of small children at work, and from their certificates I selected sixteen. On investigation I found most of the children of French descent. So, accompanied by an interpreter, we visited the homes of these sixteen children whose certificates showed that they were all over fifteen years of age, and that they were filled out by their parents. Not one of these was fifteen years old, and seven of the number were under fourteen years of age. As the law requires that certificates shall be filled out by parents, we found that, out of the lot, only one parent could read or write.

Our law, chapter forty, section fifty, of the Revised Statutes, plainly states that whoever falsely makes and utters such a certificate with an intention to evade the provisions of this chapter relating to the employment of minors, shall be subject to a fine of one hundred dollars. Now to fine one of these poor parents one hundred dollars, when he has not a cent in the world, nor will have until his children are paid at the end of the week, seems to be a little hard. Then comes the question: What has been done? I have taken this matter to the agent of the corporation, and have sent a large number from the mill, in some cases as high as sixty in one week. I think this method has met with the approval of many in touch with the child labor question.

In many cases, where we have sent the children out and tried to have them go to school, the superintendent of schools has, on an investigation, given them permission to work, or otherwise excused them from school, and with these school certificates, they go back to work. This trouble is not confined to any one place in particular, but to all manufacturing towns. We have this same difficulty in all our large mills, and the question comes up: What can be done? We have found it practically impos-

sible to punish anyone and, if we could, we find it is, in many cases, a poor family without support except from their children, and to punish a poor parent, with a number of little ones, seems to strike the wrong channel.

In order to overcome some of the difficulties which we have just outlined, we recommend that some changes be made in the present laws regulating child labor in this State. It seems to be the general opinion of modern civilization that there should be a certain age fixed, under which no child should be employed in manufacturing or mechanical establishments.

We recommend that section fifty-three of chapter forty of the Revised Statutes be so amended that no child under fourteen years of age, instead of fifteen as now provided in said section, shall, at any time, be employed in any manufacturing or mechanical establishment in the State. We believe that whether a child is, or is not, attending school a portion of the time, is not the criterion by which we should try to control child labor, but for the physical and moral benefits of the coming generation it should be an offense, prohibited by our laws, to employ any child under fourteen years of age in our manufacturing or mechanical establishments.

We are confronted with another serious difficulty which hinders us in the proper enforcement of our labor law. A law may be good and just, but unless the legislature which enacts that law and prohibits a certain thing from being done, or commands a certain thing to be done, provides efficient means for carrying that law into effect, it is useless and a dead letter upon our statute books. We believe that this could be regulated by the legislature enacting a law which would amend section fifty-five of chapter forty by making some changes and by adding to said section certain remedies and means of more efficiently enforcing the child labor law.

We recommend that the legislature enact a law which shall compel every child, either by himself personally, or by his parents or legal guardian, to produce and present to the owner, superintendent or overseer of any manufacturing or mechanical establishment where he seeks employment, a certified copy of the city or town clerk's record of birth, or a certified copy of such child's baptismal record, or passport; and if such child is fourteen or more years of age, said employer shall issue to him

a proper certificate to be furnished by the inspector, and approved by the attorney general. Such certificate, when properly filled out and executed by such child, or its parents or guardian, shall be kept on file at said manufacturing or mechanical establishment, and a duplicate of such certificate shall forthwith be sent to the inspector. When such child leaves the employment of said manufacturing or mechanical establishment his employer shall forthwith send to the inspector the certificate that is kept on file, and shall give up and surrender to such child his certified copy of the record of his birth.

We believe that such enforcement as we have been able to give the child labor law of this State is due, in a great measure, to the hearty co-operation of the superintendent of schools in the various manufacturing cities of our State, and we invite, in the future, their co-operation with us for the enforcement of our child labor law.

We realize that the better element of people in our State understand that the child labor problem is a problem of great magnitude, and we appreciate their assistance and co-operation in helping us to enforce these laws, and we invite their co-operation in the future.

CHILDREN EMPLOYED.

The following table will show the number of children employed in the mills of the State on November 1, 1906:

Name of Corporation.	Location.	Number of children working under certificate.	Number excused from school by school board.
Androscoggin Mills	Lewiston	44	-
Barker Mill	Auburn	16	16
Bates Manufacturing Company	Lewiston	79	1
Cabot Manufacturing Company	Brunswick	49	16
Continental Mills	Lewiston	24	-
Dana Warp Mills	Westbrook	23	-
Edwards Manufacturing Company	Augusta	96	8
Farwell Mills	Lisbon	7	1
Farnsworth Company	Lisbon Center	1	-
Goodall Worsted Company	Sanford	63	-
Hill Manufacturing Company	Lewiston	22	2
Limerick Mills	Limerick	5	5
Lockwood Company	Waterville	151	43
Maine Alpaca Company	Sanford	37	-
Maine Spinning Company	Skowhegan	9	3
Pepperell Manufacturing Company, Pepperell Div.	Biddeford	78	21
Pepperell Manufacturing Company, Laconia Div.	Biddeford	50	2
Sanford Mills	Sanford	88	-
York Manufacturing Company	Saco	35	1
Total		877	119

Number of Children Employed in Year of 1905.

Name of Corporation.	Location.	Number of children working under certificate.
Androscoggin Mills	Lewiston	36
Barker Mill	Auburn	16
Bates Manufacturing Company	Lewiston	125
Continental Mills	Lewiston	23
Cabot Manufacturing Company	Brunswick	54
Dana Warp Mills	Westbrook	17
Edwards Manufacturing Company	Augusta	88
Farwell Mills	Lisbon	15
Goodall Worsted Company	Sanford	51
Hill Manufacturing Company	Lewiston	36
Lockwood Company	Waterville	150
Limerick Mills	Limerick	2
Newichawanick Company	South Berwick	0
Pepperell Manufacturing Company, Pepperell Div.	Biddeford	35
Pepperell Manufacturing Company, Laconia Div.	Biddeford	45
Sanford Mills	Sanford	91
Worumbo Manufacturing Company.	Lisbon Falls	0
York Manufacturing Company	Saco	24
Maine Woolen Company	Old Town	5
Total		813

Number of Children Employed in Year of 1904.

Name of Corporation.	Location.	Under 16 years.	Between 15 and 16 years.	Under 15 years.
Androscoggin Mills	Lewiston	45	28	17
Bates Manufacturing Company	Lewiston	29	21	8
Continental Mills	Lewiston	29	17	12
Hill Manufacturing Company	Lewiston	22	7	15
Barker Mills	Auburn	14	4	10
Cabot Manufacturing Company	Brunswick	65	34	31
Lockwood Company	Waterville	121	116	5
Edwards Manufacturing Company	Augusta	30	30	-
Farwell Mills	Lisbon	9	9	-
Pepperell Manufacturing Company, Laconia Div	Biddeford	74	18	56
Pepperell Manufacturing Company, Pepperell Div.	Biddeford	74	21	53
York Manufacturing Company	Saco	46	30	16
Goodall Worsted Company	Sanford	66	36	30
Sanford Mills	Sanford	53	31	22
Maine Alpaca Company	Springvale	68	20	48
Worumbo Manufacturing Company	Lisbon Falls	4	4	-
Total		749	426	323

NEW LEGISLATION.

Section forty-four provides that the inspector, on complaint, shall inquire into and prosecute any violation of sections fifty-seven and fifty-eight of this chapter, relating to fortnightly payment of wages. We have had but few complaints and these have been settled satisfactorily to all. The same section refers to sanitary conditions. On this matter we have had, this year, quite a few complaints coming from our large shoe shops and, if the conditions are not improved, I would recommend more severe law to cover the same.

I would call the attention of the legislature to section fifty-eight, in regard to the penalty for violation of section fifty-seven, and add after the word " corporation " in the first line, the words, " mining, quarrying, stone cutting, mercantile, street railroad, telegraph, telephone and municipal corporation, every incorporated express and water company, and any person or firm engaged in any of the above specified kinds of business," so that said section, as amended, shall read as follows:

" Section 58. Any corporation, mining, quarrying, stone cutting, mercantile, street railroad, telegraph, telephone and municipal corporation, every incorporated express and water company,

and any person or firm engaged in any of the above specified kinds of business, violating any provision of the preceding section shall be punished by a fine of not less than ten, nor more than twenty-five dollars on each complaint under which it is convicted, provided, that complaint for such violation is made within thirty days from the date thereof. When a corporation against which a complaint is so made, fails to appear after being duly served with the process, its default shall be recorded, the allegations in the complaint taken to be true, and judgment rendered accordingly. When judgment is rendered upon any such complaint against a corporation, the court may issue a warrant of distress to compel the payment of the penalty prescribed by law, together with costs and interest."

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