

MAINE STATE LEGISLATURE

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Public Documents of Maine:

BEING THE

ANNUAL REPORTS

OF THE VARIOUS

Departments Institutions

FOR THE YEAR

1898.

VOLUME II.

AUGUSTA
KENNEBEC JOURNAL PRINT
1900

ELEVENTH ANNUAL REPORT

OF THE

BUREAU

OF

Industrial and Labor Statistics

FOR THE

STATE OF MAINE.

1897.

AUGUSTA
KENNEBEC JOURNAL PRINT
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STATE OF MAINE.

OFFICE OF COMMISSIONER OF
INDUSTRIAL AND LABOR STATISTICS,
AUGUSTA, December 31, 1897.

To His Excellency, Llewellyn Powers, Governor of Maine:

SIR: I have the honor to present the report of the Bureau of
Industrial and Labor Statistics for 1897.

Very respectfully,

SAMUEL W. MATTHEWS,
Commissioner.

INTRODUCTION.

The main features of the work of the Bureau of Industrial and Labor Statistics comprised in the Eleventh Annual Report, are the compilation of statistics relating to the cotton, the woolen and the boot and shoe industries, and facts and statistics of the summer tourist business of the State. The latter investigation, while necessarily incomplete, taken in connection with that made in 1893, under a resolve of the legislature, shows a volume of business coming to Maine through her summer resorts, of great and growing extent and importance, and the demands from all sections of the country for information on this subject seem to justify the efforts of the Bureau in giving to the public such facts as its limited means enable it to obtain.

The results of investigations of the brick-making, spool and wood novelty industries are given in descriptive articles which will be found of interest and value.

The usual returns of factories and workshops erected, enlarged and completed during the year, and a brief article on the railroads of the State, are given in the present report.

The report of the Inspector of Factories, Workshops, Mines and Quarries, is required by law to be submitted annually to the Commissioner of Industrial and Labor Statistics, and is, accordingly, published in this report.

The Bureau has encountered the same difficulties in the prosecution of its work during the last year, as during previous years. As was stated in the introduction of our last report: "While it is true that reports made to this Bureau are voluntary, there being no legislation compelling manufacturers to make them, it is to be regretted that so many corporations and firms fail to comply with the requests of the commissioner for information which might be of great value to themselves as well as of interest to all our citizens. The spirit of the law, if not the letter, calls for a liberal response to the inquiries made."

The commissioner again acknowledges his obligations for the faithful services of those who have for longer or shorter periods been in his employ during the year, Maj. C. J. House, the able clerk of the Bureau, and special agents, E. M. Blanding, J. F. Sprague, Francis Wiggin, B. J. Dunn, A. I. Brown, W. L. Stevens and Louis J. Brann.

MANUFACTURING INDUSTRIES.

The investigations for 1897 have been confined to three of our leading industries, cotton goods, woolens, and boots and shoes. Several concerns in each industry failed to make returns, while quite a percentage of those sent in were only partially filled and therefore of no practical use. Ten cotton mills, twenty-five woolen mills and fifteen shoe shops made complete returns and have been tabulated, enough to be fairly representative of the whole, and from which, as compared with the census returns of 1880 and 1890, certain results and conditions of the business are shown which will be of interest and value to those who wish to make a study of these industries.

Through the kindness of the State Board of Assessors, lists of the cotton and woolen mills of Maine, as they existed in 1896, are here presented. The sixteen cotton mills contain 869,437 spindles, and forty-seven woolen mills contain 347 sets of cards. The mill at Gardiner, another at East Madison and two in Sanford are not included as their values are obtained in a different way than by sets, a part of which at least do weaving only.

Following these lists of mills will be found the tabulations in detail of the business of the three industries named, for the year ending June 30, 1897.

Maine Cotton Mills, 1896.

Name of mill.	Location.	Spindles.
Barker Mill	Auburn.....	22,000
Androscoggin	Lewiston.....	68,516
Continental Mills . . .	Lewiston.....	83,421
Bates Manufacturing Company.....	Lewiston.....	55,848
Hill Manufacturing Company.....	Lewiston	54,000
Lewiston Mill Company.....	Lewiston.....	22,504
Farwell Mills.....	Lisbon	20,416
Cabot Manufacturing Company	Brunswick	61,000
Westbrook Manufacturing Company . . .	Westbrook	27,000
Edwards Manufacturing Company	Augusta	97,164
Lockwood Company.....	Waterville	87,700
Laconia	Biddeford	90,000
Pepperell . . .	Biddeford.....	110,000
York Manufacturing Company	Saco	50,368
Springvale Manufacturing Company. . .	Sanford.....	10,500
Portsmouth Company	South Berwick.....	9,000

Maine Woolen Mills, 1896.

Name of mill.	Location.	Sets.
Cowan Woolen Company.....	Lewiston.....	8
Columbia Mills.....	Lewiston.....	5
Cumberland Mills.....	Lewiston.....	6
Faulkner Mills.....	Turner.....	4
Farnsworth Manufacturing Company.....	Lisbon.....	8
Worumbo Mills.....	Lisbon.....	22
Webster Woolen Company.....	Webster.....	11
Gibbs Mill.....	Bridgton.....	3
Pondicherry Mill.....	Bridgton.....	6
Forest Mills Company.....	Bridgton.....	7
The Robinson Mills.....	Windham.....	2½
The Walker Mills.....	East Wilton.....	4
Wilton Woolen Mills.....	Wilton.....	3
Gardiner Woolen Company.....	Gardiner.....	7
Monmouth.....	Monmouth.....	2
Nawoc Company.....	Readfield.....	2
Cascade Woolen Company.....	Oakland.....	10
Vassalboro.....	Vassalboro.....	18
Winthrop Mills.....	Winthrop.....	10
Georges River Mills.....	Warren.....	7
Meganticook Woolen Company.....	Camden.....	3
Knox Woolen Company.....	Camden.....	6
Mt. Battie Woolen Mills.....	Camden.....	5
Camden Woolen Company.....	Camden.....	6
Robinson Mill.....	Oxford.....	10
Rumford Falls Woolen Company.....	Rumford Falls.....	1
Abbott Mill.....	Dexter.....	3
Dexter Mills.....	Dexter.....	15
Newport Mills.....	Newport.....	6
Old Town Woolen Company.....	Old Town.....	8
Brown Mills.....	Dover.....	11
Mayo & Son.....	Foxcroft.....	5
Piscataquis Woolen Company.....	Guilford.....	10
Sangerville Woolen Company.....	Sangerville.....	3
St. Ronans Woolen Mill.....	Sangerville.....	6
Carleton Woolen Mill Company.....	Sangerville.....	3
Linn Woolen Company.....	Hartland.....	8
Lakeside Worsted Mill.....	East Madison (weaving).....	
Indian Spring Company.....	Madison.....	7
Madison Woolen Company.....	Madison.....	18
Walker's Woolen Mills.....	Pittsfield.....	4
Pioneer Woolen Mills.....	Pittsfield.....	12
Waverly Woolen Mills.....	Pittsfield.....	8
Coburn Woolen Mills.....	Skowhegan.....	9
North Berwick Company.....	North Berwick.....	8
Newichawanic.....	South Berwick.....	13
Keazer Falls Manufacturing Company.....	Parsonsfield.....	4
Hargrave Mill.....	Shapleigh.....	6
Sanford Mills.....	Sanford.....	
Goodall Worsted Company.....	Sanford.....	
Hollis Woolen Mill.....	Hollis.....	4

Cotton Goods.

	Capital invested.	Cost of material used.	Value of product.	Number weeks in operation.	AVERAGE NO. HANDS EMPLOYED.				AVERAGE WEEKLY WAGES.			Total wages paid.
					Total.	Men.	Women.	Children under 16 yrs.	Men.	Women.	Children under 16 yrs.	
1	\$1,500,000	\$294,153	\$664,308	52	900	295	600	5	\$8 00	\$6 00	\$4 00	\$252,013
2	48,000	263,000	311,795	32	56	12	39	5	7 00	5 30	3 00	9,782
3	2,000,000	912,012	1,408,082	52	1,312	601	628	83	7 13	5 44	2 61	411,839
4	76,600	91,750	140,530	47	99	26	62	11	8 57	7 00	4 23	30,437
5	500,000	100,000	200,000	52	264	135	99	30	9 15	6 73	2 10	84,144
6	1,200,000	479,267	1,050,000	52	1,750	799	904	47	8 04	6 29	3 00	443,844
7	798,500	283,372	513,206	50	726	322	338	66	7 56	5 40	2 69	220,667
8	1,000,000	461,654	833,704	40	1,087	446	560	81	8 22	5 29	2 09	291,385
9	340,000	98,837	200,000	52	222	80	125	17	7 60	6 70	3 05	69,873
10	2,400,000	1,088,686	1,716,674	52	1,638	623	914	101	7 20	5 57	3 28	517,690
	\$9,863,100	\$4,072,731	\$7,038,299	48.1	8,054	3,339	4,269	446	\$7 73	\$5 79	\$2 76	\$2,331,674

Woolen Goods.

	Capital invested.	Cost of material used.	Value of product.	Number weeks in operation.	AVERAGE NO. HANDS EMPLOYED.				AVERAGE WEEKLY WAGES.			Total wages paid.
					Total.	Men.	Women.	Children under 16 yrs.	Men.	Women.	Children under 16 yrs.	
1	\$ 72,000	\$ 60,943	\$ 80,156	48	76	55	21	-	\$6 64	\$3 36	-	\$21,166
2	100,000	123,264	175,101	46	106	79	26	1	8 50	6 26	\$5 10	45,238
3	225,000	63,252	135,023	45	130	80	50	-	8 80	5 60	-	43,927
4	150,000	141,627	204,317	47	144	76	66	2	8 25	6 50	4 50	50,675
5	84,800	188,000	200,000	52	160	127	30	3	7 50	5 50	3 00	53,000
6	60,000	70,000	114,000	41	100	65	33	2	7 50	6 00	4 62	27,600
7	50,000	29,418	48,453	26	75	63	11	1	6 70	4 50	3 90	12,341
8	50,000	52,000	70,000	52	64	54	10	-	9 00	7 50	-	29,172
9	200,000	299,785	354,450	50	165	98	62	5	11 00	8 00	2 50	58,859
10	75,000	81,392	147,316	46	125	75	50	-	7 50	6 00	-	39,540
11	300,600	138,318	206,962	49	130	86	44	-	9 00	7 00	-	50,925
12	75,000	75,144	112,000	52	58	37	21	-	8 58	6 25	-	21,685
13	120,000	122,100	185,000	51	108	65	43	-	9 78	6 74	-	47,000
14	113,000	43,000	76,000	37	90	55	35	-	6 30	6 30	-	21,000
15	30,000	27,300	43,000	40	48	32	12	4	8 00	5 50	4 00	13,793
16	38,000	37,500	81,000	51	42	25	17	-	9 25	7 25	-	17,580
17	146,000	87,386	136,000	*52	100	60	40	-	8 00	6 25	-	37,960
18	250,000	64,911	134,031	39	75	54	21	-	9 36	7 12	-	25,542
19	40,000	60,000	65,000	52	35	15	20	-	9 00	7 00	-	13,200
20	100,000	80,000	196,000	52	128	85	40	3	9 00	6 00	4 50	48,500
21	125,000	125,380	220,000	52	128	88	40	-	7 72	5 00	-	39,068
22	160,000	172,984	235,000	52	160	120	35	5	8 00	6 00	3 00	55,367
23	37,000	9,500	17,000	23	47	36	11	-	8 40	5 25	-	8,537
24	125,000	55,000	95,000	52	75	40	35	-	10 15	7 75	-	35,000
25	100,000	166,228	299,503	52	243	159	79	5	8 82	5 58	3 90	94,362
	\$2,825,800	\$2,374,432	\$3,630,312	45.5	2,612	1,729	852	31	8 42	6 25	3 64	\$911,037

* Worked but five days per week, equal to 43 full weeks.

Boots and Shoes.

	Capital invested.	Cost of material used.	Value of product.	Number weeks in operation.	AVERAGE NO. HANDS EMPLOYED.				AVERAGE WEEKLY WAGES.			Total wages paid.
					Total.	Men.	Women.	Children under 16 yrs.	Men.	Women.	Children under 16 yrs.	
1	\$ 6,000	\$ 50,000	\$ 95,000	51	37	20	17	-	\$12 00	\$10 50	-	\$21,118
2	40,000	125,000	200,000	52	100	40	60	-	13 00	11 00	-	75,000
3	50,000	212,573	365,631	52	180	110	70	-	10 00	5 00	-	85,708
4	30,000	19,000	32,000	33	34	20	14	-	16 59	6 00	-	8,091
5	75,000	150,000	275,000	*50	162	110	52	-	10 00	7 00	-	58,560
6	100,000	300,000	427,445	52	†225	175	50	-	10 00	7 00	-	90,000
7	15,000	50,000	100,000	45	32	20	12	-	10 00	6 50	-	15,492
8	40,000	125,000	240,000	48	100	60	40	-	10 00	7 00	-	40,000
9	140,000	310,000	466,000	52	275	200	75	-	11 00	8 00	-	125,000
10	32,000	152,000	210,000	45	130	77	53	-	9 76	5 75	-	48,000
11	50,000	54,128	92,792	52	75	54	21	-	7 50	4 90	-	24,670
12	41,500	213,340	312,000	48	230	170	60	-	9 33	6 83	-	69,958
13	50,000	65,000	111,000	47	38	14	24	-	9 50	6 00	-	12,962
14	84,000	144,571	224,071	51	88	55	33	-	11 63	9 35	-	48,370
15	100,000	225,000	365,000	52	175	125	50	-	11 50	8 50	-	96,845
	\$853,500	\$2,195,612	\$3,515,939	48.7	1,881	1,250	631	-	\$10 40	\$7 35	-	\$819,774

* Run 15 weeks on half time.

† Run small crew three months.

ANALYSIS.

THE COTTON INDUSTRY.

The returns of the business of the cotton mills, as tabulated, cover substantially one-half of the business in the State, and the aggregate is sufficiently large to be fairly representative, in all its proportions, of the whole. A comparison of the details of the business with those given by the United States census reports of 1880 and 1890, will show some interesting results. The two main items entering into the production of cotton goods are raw material and labor. Outside of these, which we will lump together under the name of "margin," are included interest on capital invested, wear and tear of machinery, taxes and insurance, repairs of buildings, salaries, breakage and waste, profits, etc. Taking the value of the product as a basis, the following table will show the percentages of the three items, raw material, wages and margin, at the three periods named.

Items.	1880.	1890.	1897.
Raw material... ..	.55	55.2	57.9
Wages.....	.22	28.5	33.1
Margin.....	.23	16.3	.09
Total .	100	100	100

It will be seen that while the percentage of raw material has slightly increased since 1880, the cost of labor entering into the product of a given value of finished goods is over fifty per cent more in 1897 than in 1880, and the margin, which in 1880 was twenty-three per cent of the value of the product, has now fallen off to nine per cent.

The following table will show the average annual product and the average annual earnings per employe, including men, women and children, for the periods named:

Per employe.	1880.	1890.	1897.
Average annual product.....	\$1,132 70	\$1,094 61	\$873 89
Average annual earnings.....	249 73	312 50	289 50

In other words, the average annual product per individual employe from 1880 to 1890 fell off \$38.09, and from 1890 to 1897, \$220.72, or a total fall off in the seventeen years of \$258.81, or twenty-three per cent; while in the matter of average annual earnings per employe, from 1880 to 1890 there was a gain of \$62.77, and from 1890 to 1897 a fall off of \$23.00, or a net gain in the seventeen years of \$39.77, or sixteen per cent. The large fall off in the average annual product per employe is accounted for in the decline in price of raw cotton which in 1889 had fallen about eight per cent, and in 1896 about thirty-three per cent below the quotations of 1879, and a similar decline in the selling price of the manufactured goods.

The raw material and wages entering into a given product in 1880 were together seventy-seven per cent, while in 1897 the same items constituted ninety-one per cent of the product. The percentage of raw material only slightly increased, and the large increase in the percentage of wages seems to be made at the expense of margin.

THE WOOLEN INDUSTRY.

Similar tables in regard to the woolen industry are here introduced:

Items.	1880.	1890.	1897.
Raw material.....	64.2	65.9	65.4
Wages.....	15.6	21.7	25.1
Margin.....	20.2	12.4	09.5
Total.....	100	100	100

Per employe.	1880.	1890.	1897.
Average annual product	\$2,160 28	\$1,739 84	\$1,389 86
Average annual earnings.....	337 51	377 03	348 79

The table of percentages does not differ very materially from that of cotton, while the table of annual product and earnings shows a fall off in average annual product of \$770.42, or 35.5 per cent, and the average annual earnings a gain of only \$11.28, or 3.3 per cent net, in the seventeen years.

THE BOOT AND SHOE INDUSTRY.

Item.	1880.	1890.	1897.
Raw material.....	66.6	56.1	62.5
Wages	22.9	29.8	23.3
Margin	10.5	14.1	14.2
Total	100	100	100

Per employe.	1880.	1890.	1897.
Average annual product ...	\$1,566 67	\$,1485 97	\$1,869 19
Average annual earnings.....	340 69	466 64	435 82

A study of the above tables will be interesting, as compared with those of the textile industries. In the textiles the percentage of raw material varies but little, while in boots and shoes it falls off from 66.6 per cent to 56.1 per cent from 1880 to 1890, and increases to 62.5 per cent in 1897. In the textiles the percentage of wages shows a steady and rapid increase, while in boots and shoes it increases from 22.9 per cent to 29.8 per cent from 1880 to 1890 and declines to 23.3 per cent in 1897. In the textiles the percentage of margin shows a constant and sharp decline, while in boots and shoes it increases from 10.5 per cent to 14.1 from 1880 to 1890, and a further slight increase in 1897. In the average annual product per employe the textiles show a constant and rapid decline, while in boots and shoes there is a small decline from 1880 to 1890 and a sharp increase in 1897. In average annual earnings per employe the textiles show a moderate increase from 1880 to 1890 and a less decline in 1897, while in boots and shoes there appears a very decided increase from 1880 to 1890 and a slight decline in 1897.

FACTORIES, MILLS AND SHOPS BUILT DURING 1897.

In response to the following inquiries: "How many and what kinds of factories, mills or shops for manufacturing purposes, have been enlarged, completed, or are in process of erection during 1897?" "Estimated cost of same?" "Probable number of hands they will employ?" answers have been returned by the officers of nearly every city and town. Seventy-two cities, towns and plantations report building in this line as follows:

ANDROSCOGGIN COUNTY.

Towns.	Buildings.	What done.	Cost.	Help.
Auburn	Shoe factory	New.....	\$8,000	200
Durham	Saw mill.....	New.....	800	6
Webster	Woolen mill.	Enlarged . . .	20,000	

AROOSTOOK COUNTY.

Blaine	Shook mill	New	8,000	25
Fort Fairfield	Finished lumber mill	Completed . . .	400	
Fort Fairfield	Lumber mill.....	New	3,000	
New Sweden	Grist mill	New	800	1
Perham	Lumber mill.....	Enlarged	3,000	12
Sherrman.....		New	1,000	3
Merrill Pl	Lumber mill.....	Enlarged	400	15
Portage Lake Pl	Saw and shingle mill	New	4,000	25
Portage Lake Pl . . .	Clapboard mill	New	800	8

CUMBERLAND COUNTY.

Baldwin	Cooper shop	New	100	1
Brunswick	Machine shop & ferule factory	New	5,000	18
Casco	Steam grist and saw mill.	New	500	5
Deering.....	Furniture factory	Commenced . . .		
Harrison.....	Clothing factory.....	Enlarged		40
Harrison.....	Grist mill	Enlarged	1,000	
Naples	Lumber mill.....	New	25,000	20
Portland.....	Grain elevator.....	New	200,000	10
Portland	Planing mill	New	8,000	*
Portland.....	Laundry	Enlarged		10
Portland.....	Cold storage	Enlarged	2,000	
Portland.....	Bottling shop.....	New	6,000	6
Portland.....	Coal pockets.	New	8,000	10
Pownal	Grist mill	New	400	1
South Portland. . .	Bicycle plant	Enlarged	4,500	60

* In place of one destroyed by fire. No extra hands.

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FRANKLIN COUNTY.

Towns.	Buildings.	What done.	Cost.	Help.
Chesterville.	Lumber and grist mill.....	New.	\$ 1,500	4
Jay.	Pulp mill.....	New.	150,000	150
Jay.....	Pulp mill.....	Enlarged... }		
Jay.....	Paper mill.....	Enlarged... }		
New Vineyard.....	Novelty wood turning.....	Enlarged.....	500	
New Vineyard.....	Novelty wood turning.....	Enlarged.....	1,500	
Strong.....	Toothpick mill.....	Enlarged.....	500	
Wilton.....	Woolen mill.....	Additions.....	1,500	10

HANCOCK COUNTY.

Eastbrook.....	Saw mill.....	Enlarged.....	300	
Trenton.....	Grist mill.....	New.....	450	1

KENNEBEC COUNTY.

Augusta.....	Shoe factory.....	New.....	50,000	300
Farmingdale.....	Lumber mill.....	Completed...	15,000	50
Fayette.....	Saw mill.....	New.....	1,200	4
Gardiner.....	Shoe factory.....	New.....	25,000	350
Litchfield.....	Saw mill.....	Enlarged.....	200	5
Readfield.....	Publishing building.....	New.....	800	4
Waterville.....	Creamery.....	New.....	1,000	5
Winslow.....	House finish mill.....	Rebuilt.....	2,000	8

KNOX COUNTY.

Camden.....	Clothing factory.....	Enlarged.....	400	50
Friendship.....	Clam canning factory.....	Enlarged.....	200	15

LINCOLN COUNTY.

Whitefield.....	Lumber mill.....	New.....	5,000	10
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OXFORD COUNTY.

Bethel.....	New.....	1,000	10
Canton.....	Tannery.....	Enlarged.....	2,000	15
Mexico.....	Toothpick mill.....	Enlarged.....	1,500	8
Paris.....	Sleds and house finish man'fg.	Enlarged... }	10,000	25
Paris.....	Bicycle wood rim factory.....	Enlarged... }		
Paris.....	Grist mill.....	New..... }		
Rumford.....	Paper mill.....	Enlarged.....	40,000	50
Stoneham.....	Cooper shop.....	New.....	400	

PENOBSCOT COUNTY.

Bangor.....	Shoe factory.....	Enlarged.....	20,000	250
Brewer.....	Tannery.....	Rebuilt.....		
Clifton.....	Saw mill.....	Enlarged.....	300	4
Corinna.....	Woolen mill.....	Machinery.....	2,000	14
Enfield.....	Novelty and house finish.....	Enlarged.....	2,000	35
Greenbush.....	Moccasin shop.....	New.....	100	1
Greenfield.....	Spool bar mill.....	New.....	1,500	6
Howland.....	Lumber mill.....	New.....	3,000	6
Kenduskeag.....	Lumber mill.....	New.....	3,000	10
Kingman.....	Pulp wood fitting mill.....	Machinery.....	1,500	15
Kingman.....	Kindling wood factory.....	New.....	1,000	12
Lee.....	Card and weaving mill.....	Enlarged.....	2,000	6
Lincoln.....	Pulp mill.....	Machinery.....	10,000	10
Newport.....	Woolen mill.....	Enlarged.....	10,000	15
Orono.....	Lumber mill.....	Machinery... }	10,000	10
Orono.....	Lumber mill.....	Machinery... }		
Passadumkeag.....	Kindling wood factory.....	New.....	5,000	25

PISCATAQUIS COUNTY.

Towns.	Buildings.	What done.	Cost.	Help.
Abbot.....	Steam mill.....	New.....	\$ 400	2
Milo.....	Excelsior mill	Commenced.	10,000	25

SAGADAHOC COUNTY.

Bath	Windlass works	New.....	100,000	175
Bath	Roller bushing works.....	Enlarged	3,000	
Bowdoinham.....	Coat factory.	Enlarged	500	30

SOMERSET COUNTY.

Embden	Enlarged ...	200	4
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WALDO COUNTY.

Freedom.....	Pants factory.....	New.....	15
Palermo	Shingle mill	Machinery ...	400	

WASHINGTON COUNTY.

Edmunds	Box and shook mill	Machinery . .	1,000	
Jonesboro	Grist mill	New.....	1,000	2
Lubec.....	Three sardine factories.....	New.....	1,000	40
Marion.....	.....	New.....	2,000	10
Pembroke	Three sardine factories.....	New.....	1,500	50
Pembroke	Carriage and blacksmith shop.	New.....	250	2
Princeton	Lumber mill.....	Enlarged	3,000	10
No. 18 Pl	Spool bar mill (portable.).....	New.....	300	5

YORK COUNTY.

Lyman.	Shingle mill and thresher	New.....	800	
Sanford ...	Worsted mill.....	Additions ..	8,000	

RECAPITULATION.

Counties.	Number of towns.	Number of buildings.	Total cost.	Hands employed.
Androscoggin	3	3	\$28,800	206
Aroostook	7	9	21,400	89
Cumberland	9	15	260,500	181
Franklin.....	5	8	155,700	164
Hancock.....	2	2	750	1
Kennebec.....	8	8	95,200	726
Knox.....	2	2	600	65
Lincoln	1	1	5,000	10
Oxford.....	6	8	54,900	108
Penobscot	15	17	71,400	419
Piscataquis.....	2	2	10,400	27
Sagadahoc.....	2	3	103,500	205
Somerset	1	1	200	4
Waldo	2	2	400	15
Washington	7	12	10,050	119
York	2	2	8,500	
Total.....	74	95	827,600	2,339

TOTALS FOR SEVEN 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	4,312
1893	81	108	841,725	2,526
1894	48	55	663,700	1,039
1895	75	102	1,367,800	2,797
1896	62	77	1,055,900	1,470
1897	74	95	827,600	2,339

THE MANUFACTURE OF SPOOLS.

The manufacture of spools and the sawing and shipping of spool wood in Maine have assumed such proportions that they must be classed among the important industries of the State. When we add to the above the wood novelty business, we find the number of employes along these lines mounting up among the thousands, and the value of the output passing the million dollar mark.

The manufacture of spools in Maine commenced soon after the passage of the Morrill tariff bill in 1861. This bill advanced the duty on wound thread and was, without doubt, the reason that the Scotch manufacturers of thread, George A. Clark and John Clark, Jr., and the Coates, came over to this country and built mills for winding thread at Newark, N. J., and Pawtucket, R. I. Under the stimulus of protection many American companies were formed for the manufacture of thread, and the industry became firmly established in this country.

The immediate cause for the building of spool factories was the abundance of fine white birch timber in the State. The white birch area seems to occupy a wide belt that extends entirely across the State, taking in nearly the whole of Oxford county, a portion of Franklin, Somerset, Piscataquis, Penobscot and Washington counties, with scattered groves of the wood in some other counties. No estimate has as yet been made of the number of acres of white birch growth in Maine, although under the direction of the present forest commissioner, Hon. Charles E. Oak, an estimate of the acreage of the different kinds of Maine woods is being prepared. Such an estimate will be invaluable and will have an influence towards the preservation of valuable wood lands. It probably requires fifty years for white birch wood to grow from the seed to a size sufficiently large to be sawn into strips for the manufacture of spools or wood novelties. White birch turns easily and has other desir-

able qualities that render it the ideal wood for being manufactured into small articles, where accuracy and nicety of finish are required.

While there yet remain some groves of white birch that have never been cut over, it is a fact that the birch area is being rapidly encroached upon and that the greater part of it has been cut over once. If only trees of seven or eight inches and more, in diameter, are taken at the first cutting, in ten or fifteen years a second cutting can be made, and so on indefinitely, and thus the supply would probably equal the demand, provided no timber were cut in the State for manufacture elsewhere. But, as will be seen later on, millions of feet of spool bars are shipped from the State every year to Europe, mostly to Scotland, to be manufactured into spools in that country.

White birch for spools or wood novelties is usually bought and sold by the cord, the usual price per cord being four dollars, although choice lots bring four and a half or even five dollars per cord. About two cords of birch are required to make one thousand feet of spool strips. Stumpage is sold usually at about one dollar per cord. It will be seen that white birch has become a valuable timber in Maine, and that the demand for it is increasing yearly.

Spool wood is sawed into square strips about four feet in length and from three-fourths of an inch to three inches in diameter. These strips are carefully laid up in square piles to dry and season before shipment. Quite a number of the spool factories either buy stumpage and cut and saw their own spool wood, or buy the wood by the cord and then saw it into spool strips, while others buy their spool wood already sawed.

The machines for making spools seem to a looker-on to be quite simple, but they are really complicated and have been produced as the result of much inventive genius. The machinery, while essentially alike in all factories, differs in minor details, many manufacturers and foremen having made improvements in machines in their respective departments.

The first process in the manufacture of spools is the rounding of the spool strip, the boring of the same, and the sawing of it into the proper lengths. The spool bar is fed into the machine which automatically does all the rest, and the spool block falls

into a box underneath. These blocks are then conveyed to the spool lathes and poured into a hopper. In many factories the blocks are fed to the lathe automatically, a wheel, with spikes projecting from the rim, picking up the blocks and carrying them to a point where they are seized by the clamps of the lathe, these clamps placing them before the accurately adjusted knives, where they are held for an instant, and from which they drop, at the rate of about one a second, in the shape of perfectly formed spools.

It is a delicate and intricate piece of work to make good spools. Spools of a given size must not vary one from the other by the breadth of a single strand of the finest thread. This is apparent when it is known that in the thread factories several spools are wound at the same time, and the winding of one must correspond exactly with that of another.

The spools are carefully examined as they come from the lathe and are thrown out if the least defect or discoloration is discovered. They are then placed in large cylinders, together with lumps of petroleum wax, and these cylinders are revolved several hours, until the spools have worn off all roughness. They are then packed in large wooden boxes for shipment.

Following is a list of the spool factories in Maine, giving the town or village, and county where located, and the name of the manager:

- Willimantic, Willimantic, Piscataquis county, J. S. Runnells.
- Merrick, Lake View, Piscataquis county, F. W. Hamlin.
- Foxcroft, Piscataquis county, L. H. Dwelley.
- Phillips, Franklin county, Harry Austin.
- Carrabasset, Franklin county, R. H. Huse.
- Farmington Falls, Franklin county, Geo. H. Stinchfield.
- Belgrade, Kennebec county, Harry W. Golden.
- James Baldwin Company, Lewiston, Androscoggin county, H. B. Skinner.
- Kezar Falls, Oxford county, J. M. Merrifield & Son.
- Locke's Mills, Oxford county, E. L. Tibbetts & Company.
- Bryant's Pond, Oxford county, J. F. Dearborn.
- Bethel, Oxford county, J. P. Skillings.
- Dixfield, Oxford county, John S. Harlow.
- Dixfield, Oxford county, Geo. L. Merrill & Co.

South Waterford, Oxford county, Elliot & Bartlett.

South Lincoln, Penobscot county, John MacGregor.

Wilton, Franklin county, Cogswell & Moulton.

Of the above named factories, three, namely those at Lewiston, Wilton and Kezar Falls, manufacture bobbins and large spools.

The factory at Willimantic was built in about 1880, by the Willimantic Thread Company of Connecticut. Its location is at the head of Sebec lake in Piscataquis county. This region abounds in fine white birch, hence the selection of the location. The factory has given employment to as many as eighty men at times, aside from those engaged in cutting birch in the woods in the winter season. The average quantity of white birch used at this factory per year has been about 2,000 cords, although in some years it has been much more. About a year ago the Willimantic Company built a new mill at Elliottsville, near lake Onawa, and equipped it with machinery for sawing spool bars. This mill is run by electricity, generated at the larger plant at Willimantic. Of late this company has sawed its spool bars in this State and made its spools at the great thread mills at Willimantic, Conn.

The Merrick Thread Company, of Holyoke, Mass., built its fine spool factory at Lake View, near the southern end of Schoodic lake, Piscataquis county, in 1889. The Canadian Pacific Railway had just been opened through this section, but aside from the path of the railroad the wilderness was unbroken. Now there are one of the finest factories in the State, a good hotel, a store, several summer cottages and quite a village of dwelling houses, all the result of establishing an industrial plant at this point. The mill is 176 feet long by 58 feet wide. There are about sixty men employed in and about the mill, and about 3,000 cords of white birch are required yearly, besides about 700,000 feet of lumber for shipping boxes. There are paid out at this mill, for labor and material, about \$80,000 yearly. The average daily wages paid are \$1.75 and the help is principally American. A mill for sawing spool stock was built by the company during the past season on the east shore of Schoodic lake. To give some idea of the great number of spools turned

out at a first-class plant, we will state that in 1892, this mill made 69,500,000 single spools. F. W. Hamlin of Milo, is the manager of this great plant.

In 1873 Mr. L. H. Dwelley went to Foxcroft and erected a spool factory of wood. This was destroyed by fire in 1877 and was rebuilt of brick. The mill requires about 1,200,000 feet of spool wood per year, and when running to its full capacity employs about twenty-five men. Mr. Dwelley has made many improvements in machinery for turning spools and is the inventor of an automatic lathe. During the twenty-five years he has been in Foxcroft he has used 50,000 cords of white birch, for which he has paid \$4.50 per cord, or in the aggregate \$225,000, all of which has gone to farmers and others in the vicinity of the mill, who have sold him the wood.

The spool mill at Phillips, Franklin county, was recently built by Harry Austin, who formerly had a spool mill in the town of Weld. The mill employs about twenty-five hands when running to its full capacity, and turns out about 160,000 gross of spools per year, or 23,040,000 single spools. The wages paid range from \$1.50 to \$2.25 per day. Usually one man in charge of a lathe can turn 100 gross, or 14,400 single spools daily.

The Carrabasset spool mill has about the same capacity and employs about the same number of hands as the mill at Phillips.

The same may also be said of the mill at Farmington Falls.

The mill at Belgrade, Kennebec county, is one of the oldest, if not the oldest mill in the State. It was built about forty years ago and manufactures all sizes of thread spools. It employs twenty-five hands and its yearly output is about 150,000 gross, or 21,600,000 single spools.

The James Baldwin Company's spool and bobbin mill at Lewiston is a branch of the same company's large plant at Manchester, N. H., and has been established more than forty years. Bobbins, large spools and skewers are the product of this mill. About fifty men are employed the year round. White and yellow birch and rock maple are used, and the value of the annual output is about \$40,000. This factory supplies nearly all the cotton and woolen mills in this State, besides sending much of the product to Massachusetts, Rhode Island and mills in the South.

The bobbin mill at Kezar Falls in the town of Porter, Oxford county, is not so extensive as the Lewiston mill, neither is the bobbin mill at Wilton, Franklin county, still both of them are important and flourishing plants.

The spool mill at Locke's Mills, Oxford county, was built in 1892. It is a brick structure and is a first-class plant in every respect, being provided with every modern convenience and device. Its capacity is about 1,500 gross, or 216,000 single spools daily. It employs from forty to fifty men and requires 1,000,000 feet of spool bars yearly.

In 1870, J. F. Dearborn went to Locke's Mills and commenced to make spools. Later on the town of Woodstock offered some inducements, and Mr. Dearborn established a fine plant at Bryant's Pond in that town. The mill is well equipped with the best of machinery and everything in and about the plant is first-class. When running to its full capacity, about twenty-five men are employed and the output equals that of the mill last described.

The spool mill at Bethel was built in 1882. It is one of the best mills in the State, and here orders are executed for difficult and peculiar spools, as well as for those of regular make. From twenty-five to thirty men are employed and the output is about 1,000 gross per day. Some bobbins are also made at this mill.

There are two spool mills in Dixfield, one owned and operated by John S. Harlow, and one by Geo. L. Merrill & Co. Mr. Harlow's mill has been built about six years. It employs twenty-five men and requires 2,000 cords, or 1,000,000 feet of spool wood per year. The output is about 180,000 gross of spools per year. This mill has received additions during the year and a new eighty horse power engine has just been added to the equipment.

The other Dixfield mill was built about ten years ago, but has been under its present management about five years. It employs from twenty-five to thirty men and requires from 2,000 to 2,500 cords of spool wood annually. The daily capacity of the mill is from 1,000 to 1,200 gross of spools, or 300,000 gross per year.

The spool mill at South Waterford is of about the same capacity as the one last described, and employs about the same number of hands.

The spool mill at South Lincoln proved to be one of the most interesting plants visited. John MacGregor, the owner, was born in Scotland and learned his trade in that country. When he first came to this country he went into the employment of the Clark Thread Company. He went to Lincoln in 1873 and built a mill there in 1875. Many additions have been made since that time and quite a village has grown up around the spool works. About fifty men are employed and from 2,500 to 3,000 cords of spool wood are required annually. No better spools are made in the world than are turned out at South Lincoln.

Spools are made to some extent in part of the wood novelty plants in the State, but we think we have included in the foregoing descriptions all the plants that can be properly termed spool factories.

An approximate estimate of the number of employes, amount paid in wages, amount paid for spool wood, number of spools manufactured, and the value of the output, gives the following results:

Number of men employed in and about the mills 550.

It will be perfectly safe to place the average daily wages at \$1.50; this would give the total amount paid yearly in wages at \$247,500. For four months in the year many additional men are employed in the woods by some of the plants, engaged in cutting spool wood, of which no account has been taken in the above estimate.

For supplying the seventeen mills with raw material, 30,500 cords, or 15,250,000 feet of spool wood is required. For this, at least \$4.00 per cord must be paid, and in many cases more than that amount. At four dollars per cord, the wood would cost \$122,000, making \$369,500 for wages and material. To the above sum the interest on the capital invested in the plant must be added, also the cost of keeping the machinery in repair, keeping the buildings insured, etc.

It is difficult to estimate the number of spools manufactured yearly by the foregoing mills, but we believe that the following

approximation is safely below the actual number: On the supposition that 2,000 cords, or 1,000,000 feet of spool wood will make 50,000,000 two hundred yard spools, a supposition that is below the estimate of many experienced spool manufacturers, we find that over 750,000,000 two hundred yard spools are manufactured yearly in the State of Maine.

In regard to the total value of the product of the spool factories, no approximation based on actual figures can be made. Spools are sold by the gross, and as the price per gross varies from seven cents to sixty cents, according to the size and quality of the spools, no average price can be obtained on which to base a calculation. It will be safe to say that a fair profit on the entire cost of manufacturing, including wages, raw material, interest, repairs, insurance, shipping, etc., will carry the value of the spools made in Maine in a year to fully one million dollars.

The market for the spool product of Maine is extensive, and includes the great Clark Thread Company of Newark, N. J., the Coates Thread Company of Pawtucket, R. I., the Willimantic Thread Company of Willimantic, Conn., the Merrick Thread Company of Holyoke, Mass., the Kerr Thread Company of Fall River, Mass., the New England Thread Company of Darlington, R. I., the Smith Thread Company of East Hampton, Conn., the Bartow Thread Company of Providence, R. I., and many others.

The great majority of the operatives in the spool factories are Americans, and they are an intelligent and fine looking lot of men. We found that a large number of the married men own the houses in which they live. While the wages earned may not be considered large, the work as a general thing is regular and permanent and the pay certain. Quite a number of small villages are almost entirely dependent on the work furnished by the spool factory that has been established in the vicinity. The spool factories are almost universally run by steam power. This fact enables them to be located in the most favorable place, and usually we find them near railroads. There are several along the line of the Grand Trunk Road, two near the Portland and Rumford Falls Road and one at the terminus of the Sandy River Road. The spool factories have shared in the depression of the past four years, but there has been a marked improve-

ment since July last, and most of the factories are now running to their full capacity.

We now turn to another phase of the spool industry in this State, that of sawing spool wood and the shipping of it to foreign countries. This business has increased rapidly within a few years and has attained enormous dimensions.

It is impossible to give a perfectly correct list of all those who have engaged in the business of sawing spool wood. It is a business that can be taken up quickly and dropped as quickly, but we will present the following as an approximate list, well knowing that it is far from complete:

Perkins & Danforth, 1,500,000 feet at Birchville, on the Bangor and Aroostook Road, and 500,000 feet at Katahdin Iron Works.

Hudson, Hussey & Goldthwait, Guilford, 750,000 feet.

E. H. Danforth, Lagrange, 200,000 feet.

T. J. Stewart & Co., Boyd lake, Orneville, 2,250,000 feet.

Leslie & Heal, Lagrange, 100,000 feet.

W. H. Welch, Stetson, 100,000 feet.

A. J. Chase & Son, Sebec, 250,000 feet.

J. G. Sawyer, Howland, 250,000 feet.

J. S. Page, Hartland, 250,000 feet.

J. L. Lewis & Sons, Brownville, 700,000 feet.

Swayne & Reed, Roxbury, 225,000 feet.

Lewis Reed, Mason, 500,000 feet.

Z. H. & L. D. Shepard, Phillips, 100,000 feet.

Bridgton Lumber Company, 300,000 feet.

Lewis Crockett, Naples, 150,000 feet.

Fred Sanborn, Denmark, 100,000 feet.

Lewis Knight, Sebago, 200,000 feet.

John & Luther Fitch, Sebago, 200,000 feet.

A. & P. B. Young, Hiram, 200,000 feet.

H. W. Cousins, Fryeburg, 150,000 feet.

Charles Linscott, Brownfield, 75,000 feet.

A. S. Bean, West Bethel, buys about 2,000,000 feet of spool bars, which he sells to other parties as he is not a spool manufacturer.

The foregoing is only a partial list of those who saw spool wood, but it can readily be seen that the industry is quite an

important one, and that it follows the white birch belt across the State.

The principal exporters of spool bars are as follows:

T. J. Stewart & Co., Bangor, 6,000,000 feet.

S. C. Dyer Lumber Co., Portland, 1,250,000 feet.

D. Birney & Son, Portland, 1,800,000 feet.

Berlin Mills Co., Portland, 1,500,000 feet.

J. H. Hamlin & Son, Portland, 3,000,000 feet.

The aggregate is 13,550,000 feet of spool bars, exported to foreign countries, mostly to Scotland, during the past season. The average price paid to the manufacturer is \$18.50 per 1,000 feet. This would give \$250,675, as the amount distributed to the several manufacturers in return for spool bars for exportation.

It will be seen that the quantity of spool wood exported from the State across the ocean yearly, nearly equals the quantity manufactured into spools in the State. Besides the above, several millions of feet of spool bars are sent to other states to be manufactured into spools. The total amount required for manufacture within the State and for foreign and domestic shipment cannot be less than 35,000,000 feet, or 70,000 cords of white birch wood annually. In view of these facts it becomes a question of vital importance how long the supply will hold out, with such enormous drains upon it. It is evident also that if there were no foreign shipments of spool bars, the yearly encroachment on the white birch area would be reduced by about one-half. In addition to the demand for white birch for the manufacture of spools, it must be remembered, that millions of feet are required in the wood novelty business, of which we shall treat in the following article. There is hardly an industry in the State the benefits of which are scattered so widely and the results of which are so beneficent as the spool business. The work is so nice and delicate that the highest mechanical skill is required, hence the operatives are found to be sober and intelligent men, desirous of making homes for themselves and families, and ready to do their part in building up such communities as will tend to the moral and material advancement of the State.

THE WOOD NOVELTY BUSINESS.

The history of the manufacture of wood novelties in the State of Maine covers about the same period as the manufacture of spools, and like that industry has grown to important dimensions. The term "wood novelties" applies to all the small articles turned from wood, such as handles of all sizes and descriptions, druggists' boxes, small boxes for hardware dealers, checkers, dice boxes, blueing boxes, wooden stoppers for paint and varnish cans, etc., etc. The different things that are made in a wood novelty factory are almost numberless. In one plant visited, we found over a thousand different samples of things that had been made during a period of about twenty years. They included almost everything that can be made of wood by turning with a lathe. The lathe most commonly used for this business is the famous "Weymouth" lathe, but in many plants we found machinery that had been invented by the proprietor, manager, or some skillful foreman. We have not confined our investigations strictly to those plants where small articles are made by turning, but have included those plants, the product of which is different from that of ordinary wood working plants. We find that more people are employed, and the value of the product is greater than in the spool manufacture of the State. The following is a list of the novelty plants, although possibly the manufacture of wood novelties is carried on to some extent in localities not mentioned in the list.

Russell Brothers & Estes, Farmington, Franklin county.
This plant has branches at Phillips, Madrid and Carrabasset, all in Franklin county.

Jenkins, Bogart & Co., Kingfield, Franklin county.

E. E. McLain, New Vineyard, Franklin county.

Frank Luce, New Vineyard, Franklin county.

Chas. H. Bartlett, New Portland, Somerset county.

C. Forster, Strong, Franklin county.

C. Forster, Dixfield, Oxford county.

Paris Manufacturing Company, South Paris, Oxford county.

J. N. Hodsdon, Bethel, Oxford county.

J. A. Thurston, two mills, one in Bethel, one in Newry.

Maine Wood Rim Company, West Paris, Oxford county.

Lewis M. Mann, two mills, one at West Paris, one at Milton plantation.

Merrill, Springer & Co., Dixfield, Oxford county.

Vanceboro Manufacturing Company, Enfield, Penobscot county.

A. S. Bean, West Bethel, Oxford county.

J. Lewis & Sons, Brownville, Piscataquis county.

Hallett Toothpick Company, Mechanic Falls, Androscoggin county.

The plant of Russell Brothers & Estes at Farmington, was established about fourteen years ago, and was incorporated in 1892. This is the most extensive purely wood novelty plant in the State. The products are druggists' boxes, handles of all kinds, and all sorts of small things turned from wood. There are forty lathes in the mill, and there is also another mill, near the Maine Central Railroad station, that has a dozen lathes. This latter mill is only run when the concern is rushed with orders. The concern employs 140 hands, about forty of whom are girls. The work of the girls consists in polishing, staining, counting and packing the product. It requires about 5,000 cords of white birch annually to supply this plant. The company has mills for sawing birch strips at Phillips, Madrid and Carrabasset. These branch mills employ about fourteen hands each. In the winter season a large number of men are employed in the woods in cutting birch timber. The firm of E. B. Estes & Co., New York, takes the whole product of this plant, sending much of it to Europe. The value of the output is \$100,000 annually.

The mill of Jenkins, Bogart & Co., is at Kingfield. It is a fine plant, not so extensive as the one at Farmington, but doing about the same kind of work. It has fifteen lathes and employs about sixty hands. The value of the product would be between

\$40,000 and \$50,000 annually. Bogart & Hopper of New York, take the entire product of this mill.

The plant of E. E. McLain of New Vineyard, is about equal in capacity to the plant at Kingfield and does the same kind of work with the exception of polishing. The firm of E. B. Estes & Co., New York, take the entire product of this plant.

The mill of Frank Luce of New Vineyard, is not quite so extensive as McLain's, but does the same kind of work. The product is taken by the American Enamel Company of Philadelphia.

The mill of Chas. H. Bartlett of New Portland, does the same kind of work as the Farmington and Kingfield mills. On one occasion we found the operatives in this plant just finishing up an order for 10,000 thimble cases. These cases were made in the form of an acorn and were just large enough to contain one thimble each. They were stained in different colors and were very handsome.

Mr. Charles Forster has a toothpick mill at Strong and one at Dixfield. Mr. Forster was the originator of the toothpick industry in Maine, and established the first mill in 1857. The mill at Dixfield employs about forty hands and that at Strong 160 hands, or 200 in all. About half of these employes are girls, and their wages are \$1.25 a day. The wages for men \$1.50 a day. About 525,000,000 toothpicks are made annually at Dixfield and six billion at Strong. They are sent to all parts of the world. The mills run about eight months in the year, and the value of the output is about \$40,000 annually. The Hallett Toothpick Company of Mechanic Falls, is a company recently formed. They expect soon to be able to manufacture 100 cases of toothpicks daily.

The immense plant of the Paris Manufacturing Company at South Paris, is one of the largest and most important plants of its kind in this country. Mr. H. F. Morton, the present manager, was the originator of this great industry and he first commenced in a small way at Sumner in 1868. The plant was moved to Paris Hill in 1873 and to South Paris in 1884. It is now incorporated with the following named officers: Geo. A. Wilson, president; Geo. R. Morton, treasurer; Geo. B. Crockett, secretary; H. F. Morton, general manager. The company

have ten acres of land close to the line of the Grand Trunk Railway at South Paris, seven acres of which are occupied by the factory proper, the storehouses, sheds and lumber yards. We found 175 men at work in this plant, and as many as 210 have been employed at one time. The wages average about \$1.75 per day per man. We can only mention a few of the articles manufactured. A specialty is made of children's sleighs, sleds, carts, desks, etc., but the company manufacture an endless variety of useful articles for older people. The following statement, taken almost at random from the books of the company, will give some idea of the different kinds, as well as the numbers of each, made in an average year. There were made last year 100,000 children's carts, wagons and wheelbarrows; 25,000 tables, 18,000 chairs, 13,000 desks, 12,500 cycle stands, 15,000 step ladders, 3,000 swings, 38,000 sleds, 15,000 school desks and chairs, and 1,200 baby sleighs. The above are only a few of the articles manufactured. The goods are sent to all parts of the United States, and many are sent to Europe and other parts of the world. Among the customers for the goods in this country are the following wellknown firms:

John Wanamaker, Philadelphia; Siegel, Cooper & Co., Chicago; The Fair, Chicago; Marshall, Field & Co., Chicago; A. M. Rothschild, Chicago; Hahne & Co., Newark, N. J.; Emmons S. Smith, Washington; R. H. Macy & Co., New York; Abraham Strauss, Brooklyn; Peabody and Whitney, Boston; Jordan, Marsh & Co., Boston; Houghton & Dutton, Boston; R. H. White & Co., Boston.

The concern has a list of over 1,500 customers. One order from John Wanamaker amounted to \$8,500. Payments are made to employes every two weeks, and the sum paid in wages last season amounted to \$75,000. The value of the total product of the plant is \$175,000 annually, and is increasing constantly. The employes are almost without exception Americans and are a fine looking body of men. More than half of the married men own the homes in which they live. This concern is very prosperous under its present management, and has paid an eight per cent dividend to shareholders every year. The different kinds of wood used in the plant include maple, white

and yellow birch, oak, ash, cherry, pine and several others. These woods are bought, for the most part, of farmers and others in this State. The plant will be considerably enlarged during another season.

J. N. Hodsdon, Bethel; R. J. Virgin, South Bethel, and J. A. Thurston, one mill in Bethel and one in Newry, carry on the wood novelty business to some extent, and employ in all, about fifty hands. Mr. Virgin at the time of our visit, had just completed an order for 5,000,000 skewers.

The State of Maine Wood Rim Company at West Paris, was in some respects the most interesting industry visited. Bicycle rims are the product of this plant. This is one of the three bicycle rim factories in the country, the others being located respectively in Ohio and Pennsylvania. The plant is situated on a lot of about five acres, close to the line of the Grand Trunk Railway. The factory has a straight front east to west of 420 feet. The total floor surface amounts to 74,800 feet. Its power is derived from two 100 horse power boilers and a 150 horse power engine. It has dry kilns, is lighted by electricity and has ample protection against fire. It has ninety employes at the present time, and its monthly pay roll amounts to about \$3,000. It turns out at the present time, about 1,800 rims daily and the value of the yearly product is about \$120,000. The process of making the rims is exceedingly interesting. They are made of rock maple, and each rim is composed of three pieces glued and pressed together with such force and nicety, that the rim appears like one piece, and only the most searching examination can detect the joints. The three pieces are steamed, then bent, and, after being glued, are submitted to an enormous pressure in an ingenious machine operated by steam power. They are then taken to the lathes, one of which turns the concave surface of the outside, and another the convex surface of the inside of the rim. They are then conveyed to the sandpapering machine and smoothed. They are then ready for staining and varnishing. They must then be bored for the spokes and are then ready for shipment. Of course the wood must be perfect, and not the least defect or discoloration is allowed to pass. Much of the machinery used has been designed expressly for this plant, and these machines,

as well as all the steps in the construction of the rims, require the supervision of skilled mechanics. The employes in this plant are all Americans. The plant has been established about a year and a half, and its business has constantly increased.

Lewis M. Mann has two wood novelty mills, one at West Paris and one at Milton plantation. While he manufactures various wood novelties in these mills, clothes pins and pail handles are his principal product. He employs in both mills about thirty-five men and his yearly output of clothes pins is about 250 boxes of five gross in a box, or 180,000 clothes pins, and about half as many pail handles, yearly. He requires for his mills about 1,500 cords of white birch annually.

Merrill, Springer & Co., Dixfield, carry on an extensive business in wood novelties. Mr. Springer, of the firm, has invented a lathe that takes his name, and its work is equal to that of the famous Weymouth lathe. We found Mr. Springer just completing an order for 8,000,000 checkers, and he told us he had just shipped 200,000 dice boxes. We watched the operation of making checkers for a few minutes, and saw them fall from a Springer lathe at the rate of about two in a second. These checkers were sent to Clark & Sowdon of New York, the great dealers in all sorts of games. Among other things, this firm has made during the past season, 2,500,000 counters for games. Many and wonderful are the wood novelties.

The Vanceboro Manufacturing Company has a large wood novelty plant at Enfield, Penobscot county. It was incorporated in 1892 and started in Enfield in 1893, with an authorized capital of \$100,000. Eugene M. Hersey of Bangor, is president and Charles B. Treat of Enfield, secretary and treasurer. About 35 men are employed, and the plant requires about 1,000 cords of white birch annually. Among the articles manufactured we find the following: About 5,000 gross of tack barrels, 200,000 whip sockets, 3,000,000 curling tong handles, 3,000,000 rafting wedges, etc. The plant is one of the best in the State, having fine buildings and the most modern improved machinery. Mr. Charles T. Gilman, the foreman of the machine shop, makes all the tools and knives used in the mill. The value of the yearly output of the plant is about \$30,000.

A. S. Bean has a wood novelty mill at West Bethel, where he employs about twenty-five men. Mr. Bean is a dealer in spool strips to the amount of about 2,000,000 feet yearly. The most of these are sold to domestic rather than foreign manufacturers. The novelty mill at West Bethel is a fine one, the product being the usual variety of wood novelties.

At Brownville, J. Lewis & Son have a mill for cutting shoe peg slips, the only one, so far as we know, in the State. These slips are cut from white birch, the very best of stock only being used. This firm saws about 600,000 feet of spool bars in a year, and for six months employs, in the mills and the woods, about 100 men.

Some of the spool manufacturers do considerable wood novelty business, and this is notably the case with John F. Dearborn of Bryant's Pond, and E. L. Tibbetts & Co. of Locke's Mills.

We have, however, described the plants of the principal wood novelty manufacturers, and we find the following approximate results: The value of the product of all the wood novelty plants is more than \$800,000. The number of employes in the factories, aside from those employed a portion of the year in the woods, is nearly 1,000, and there are certainly half as many more employed in the woods during a portion of the year.

If we should include the four orange box manufactories in the State, and the veneer mill of the Ranger Brothers at Foxcroft, and the veneer mill of Cooper Brothers at Newport, with the foregoing novelty factories, we should find the grand total value of the output far in excess of a million dollars, and the number of employes not far from 1,500.

The Ranger Brothers were formerly at Wilton, but removed to Foxcroft, two years ago. They cut veneering from basswood principally, and this veneering is used for sleigh and carriage panels and dashers, picture and mirror backing, etc. They use about 300,000 feet of basswood yearly.

The Cooper Brothers have a similar mill at Newport, their product being used for the same purposes.

The orange box manufactories are located as follows: One at Danforth; one at Oakfield, Aroostook county; one at Blaine, Aroostook county, and one at Princeton, Washington

county. The first three are owned and operated by the firm of Hathorn, Foss & Co.; the one at Princeton is operated by C. B. Eaton. The increased duties placed on imported foreign fruit by the Dingley tariff bill, in order to protect the fruit growers of Florida and California, caused much less fruit to be imported, and consequently the demand for orange box shooks decreased proportionately. The product of the orange box factories in Maine is sent to the West Indies and to the fruit growing countries around the Mediterranean, and the boxes come back to this country filled with oranges and lemons. There is a rebate on American made boxes and that rebate is retained in the present tariff, but in order to secure the votes of the senators from the Pacific states for the new tariff bill, the duty on foreign fruit was increased. The orange box factories did but little, last season, but the first effects of the new tariff have passed away, and another season will see all the factories at work again. In the orange box factories, yellow birch, maple and beech woods are used. The logs are sawed into lengths of about 4 feet and these butts are placed in a close compartment and steamed for several hours. They are then clamped into a machine and caused to revolve before a knife which cuts from them a veneer of the required thickness. The veneers in some cases are more than a rod in length. These veneers are then cut into box shooks, and each box tied up by itself. In this condition they are shipped to the various countries from which orders have been received. The business has been a profitable one up to the time of the passage of the last tariff bill, but it is not ruined, and after adjustment to new conditions will undoubtedly be continued to advantage.

About ten years ago, the whole wood novelty and spool business in New England received a stunning blow from the effects of which it has not yet fully recovered. Reference is had to the purchase of many of the plants by a syndicate entitled the "American Bobbin, Spool and Shuttle Company." Plants which had been prosperous and were doing a good business were absorbed by this syndicate, and the usual result followed. Factories were shut down and the laborers thrown out of employment. Some plants, after being idle for years, have been bought back again by the former owners, and now the collapsed syndicate has

advertised the whole of the remaining property of the American Bobbin, Spool and Shuttle Company for sale. The lesson has been a severe one, but the experience has been valuable, and the wood novelty and spool business of the State is, today, on a surer and safer foundation than ever before, and in our round of visits we found every plant but one at work again, and evidently sharing in the prosperity that has attended the revival of American industry.

In estimating the value of the great industries that we have reviewed to some extent, it must be remembered that the raw material was once considered worthless except for fuel; that, owing to the demand for it, caused by these industries, it has become one of our most valuable woods; that it is purchased from farmers and other citizens of the State; that Maine people are for the most part employed in the factories; that the product is sold almost entirely out of the State, thus returning to the State the entire value in money; that the work is healthy and pleasant, requiring great intelligence and skill, and is therefore a factor in producing a higher standard of citizenship.

BRICK MAKING IN MAINE.

The history of brick making in Maine, since the discovery of the new world, at least, begins with the record of the first white settlers in the State. Yet, though there is ample evidence that it has ranked and does still rank among the foremost industries of the State, its history up to the present time is found only written in beautiful, but hardly intelligible characters, from north to south of the Western hemisphere, in the brick structures of the cities. Its history is partly told by many prospering brick manufacturing plants throughout the State, today, and glimpses of what it was are found in the innumerable grass-grown ravines cut through the suburban hills, denoting the places where brick-makers of generations ago toiled and hoped and flourished and failed—growing as their brick-kilns grew, basking for a while in the sunshine of prosperity and dying even as the fires in their kilns went out, to be followed by other men of equally high ambitions and similar energy and endurance, and by other brick making plants of greater dimensions, different methods and greater capacities.

The first Maine-made brick was undoubtedly a contemporary of the first Maine-sawed lumber, but of this there is no record that speaks with absolute certainty. Book-making historians have dealt courteously with the lumber industry, and with other industries of the State from the beginning, but brickmaking seems never to have been considered worthy of notice. This seems strange when it is remembered that Maine bricks have been important factors in the building of New England cities, and it seems still more strange when it is considered that thousands of citizens of Maine in many generations received some of the most valuable lessons of their lives in Maine brickyards, and that millions of dollars have been added to the wealth of the State from her clay resources.

But the book-making historian is not alone to blame, for aside from the marks which the industry has left upon the face of nature, it furnishes no record of itself. There are no old books of account, no documents relating to sales or dealings in brick, no figures of what was done or proposed to be done, no memoranda or authentic tale of anything in connection with a Maine brickyard dating beyond the early years of the present century, though many a Maine farm house and many an ancient Massachusetts business block stand as monuments to the industry of early Maine brickmakers. A search for statistics of the past is a groping in the dark, a grasping of many fragments that fall far short of piecing out a complete story.

This much the brickyard tells: That Maine was blessed, when the ice king halted in his march from the north and his glaciers loosened their grip upon the masses of pulverized rock that they had pared from the granite hills, and let those masses fall in rolling hills of excellent clay near to the great waterways of the State. There the first settlers found them and there, when the log cabin became too small and a finer house was wanted, the material was found for the construction of that first great requisite of a comfortable home, a good chimney. And while the logs were being whipped into boards and lumber for the dwelling, the clay was moulded and baked and made ready for the great brick fire places and the chimneys.

When Maine began shipping her sawed lumber for the building of cities in other states, there is no doubt that the brick-making industry kept steady pace with the saw mills, and as those cities grew and the ravages of fire began to teach them that cities could not exist of lumber alone, they turned to bricks and found in them the very material which they needed. The early custom was frequently to ship brick and lumber together, the brick being used as ballast for the cargo. Later, when Maine began shipping hay to Massachusetts and barrels to the fishing ports, bricks were found to be a most profitable accompaniment to the lighter articles of freight. Boston became its chief market and promoter of Maine brick yards, somewhere in the years between 1760 and 1770. The ravages of fire had caused the citizens to choose brick and stone in the construction

of buildings, and, of the two, brick was always the preferable material.

The clay in the immediate vicinity of Boston was of a poor grade and lying beneath the surface. The machinery of the time could not handle it except at great expense. The clay of Maine was the finest of its kind to be found anywhere. It worked easily, lay where it could be economically handled, and burned a beautiful red color. A primitive brickmaking plant in Maine was an inexpensive one, and the knowledge necessary to operate it was acquired in a few brief hints. The would-be brickmaker sought a hill near the river with a bit of flat land lying between the river and the hill. This flat he levelled up with scrapings from the surface of the hill. A circular pit, about 15 or 20 feet in diameter and 3 feet deep, was sunk near the base of the hill, and in that the clay was soaked after having been picked and dried upon the bank. In this pit a wheel was set, rotating in an elliptical course through the pit or tread, as it is yet called. The power to drive the wheel was furnished by oxen, and a boy generally stood upon a box in the centre of the pit to keep the oxen in motion. The action of the wheel dissolved the lumps of clay in the tread and rendered the contents into a homogeneous mass. Then the wheel was removed and the clay was shoveled from the tread on to a table, beside which the moulder stood. The moulder grasped the clay with his right hand and with a dexterous movement threw it into the mould, his left hand pressing it harder into the mould and smoothing it off, while the right hand performed its work. Then the top of the mould was "streaked" off clean with a straight stick and the mould, containing six bricks, was taken by the off-bearer and dumped, that is, it was laid upon the yard with the back or slide up, when the slide was drawn and the mould was taken up, leaving six soft bricks upon the flat to dry. An expert moulder might mould 3,000 bricks in a day. His evenings were passed in filling the pit with clay for the morrow's output, and when the surface of his yard became closely covered, he picked up a day's work which had dried, and packed them in long tiers lengthwise of the yard. The crew required for one of these brickyards was not more than two men, and unless more than one pit was made, more than three men would

be superfluous. Two men might make, in the course of three or four months, 150,000 bricks. The wood for the burning grew about the yard, and could be had for the cost of cutting. About 75 cords of wood would burn 150,000 of bricks. Wages, up to the 40's, seldom ranged above \$16 per month, so that the cost of bricks in those days, might be figured thus:

Two men 4 months, at \$16 per month.....	\$128.00
Seventy-five cords of wood, at 50 cents.....	37.50
Lumber.....	10.00
Work of oxen.....	5.00
Total.....	<u>\$180.50</u>

The cost of bricks for years could not have exceeded \$2 per 1,000 in Maine. The cost of shipping to Boston did not exceed \$1.50 a 1,000, and the price in Boston, as far back as figures have come to our knowledge, was, at its lowest, \$3.75 per 1,000, and oftener \$5.75 @ \$6.50 per 1,000. As Boston increased in size, the Maine brickyards grew in number. The first yards of importance were established on the Sheepscot and Damariscotta rivers, at Portland, at Bowdoinham and Hallowell on the Kennebec, and at Bangor and Brewer on the Penobscot rivers. In 1800, the brickyards of Maine numbered, probably, 30, with an average crew of three men to a yard and with a probable output of 4,500,000, of which, probably, 4,000,000 were shipped to Boston. Then, as now, there were seasons of great activity, and seasons when the demand seemed to have been totally lost. It was a simple matter, then, to quit brick making or to venture into it at short notice, there being no expensive machinery to get ready, and no expensive crews to arrange for. In 1835, or thereabouts, there came the first revolution in the brick business, the introduction of a machine, which increased the output of the yards to nearly double their capacity per man. This was the Hobbs brick machine, an accurate model of which may be found still working in all but a few of the brickyards of the State at present. The Hobbs machine was used first in Portland. Bangor next tried it, and then every Maine yard adopted it. The opposition to it was great at first. The arguments against it were that it made bricks too fast, that it would not work mud of

sufficient stiffness to make solid brick, and that it would drive men from engaging as journeymen brickmakers on account of the increased make and the probable decrease in wages by the displacement of men. The machine, aided by circumstances in no way connected with brickyards, proved that none of the arguments were good. It did not make bricks too fast, nor fast enough to meet the demand upon certain occasions, although it nearly doubled the brick making ability of the man. Whether or not it produces bricks as good as the old hand-made article is a question still unsettled. There were certainly many thousands of hand-made bricks of poorer quality than the average Hobbs machine brick. It did not drive men from brick making, but with its introduction began an era of activity, due, of course, to the growth of Maine and Massachusetts cities and not in any way to the introduction of the machine.

But with the machine the brickmaking plant took an upward step in importance. The plan of the yard was changed only in area of drying surface and in the shape of the tread. The tread became semi-circular in form with a square front facing the yard. In the centre of the front the machine was set. The clay being soaked over night, one man, called the tread-tender, shovelled the mud into the machine, which was a box 4 feet square and 5 feet high from its bottom, which rested upon legs 2 1-2 feet high. Within the box was the "crab," a cylinder of wood fixed with four sets of four wooden knives in each set, which was revolved by a sweep to which a horse was attached. The knives ground the clay and pressed it forward through an opening at the bottom to the trunk or press box. Beneath the press box ran a carriage which carried the mould in to receive the mud. A foot treadle brought down the top of the press box pressing the mud into the mould. The operator brought back the lever bringing the carriage with the filled mould out from under the press box. Then the operator took his mould and ran with it to the flat to dump it. Two men worked at "striking," as moulding is called, and while one man dumped or laid his bricks upon the flat, the other was striking. In this manner two men could easily strike and lay upon the yard 6,000 bricks in six hours, the tread-tender keeping the pug mill full, the horse grinding, the water box, for the wetting of the moulds

full, and the newly laid bricks covered with a coat of sand shaken from a fine sieve to prevent them from cracking. It was hard work whether striking or tending tread, and not every man who essayed to become a brickmaker could stand the first few weeks of learning the trade. Some idea of the character of the work demanded by the new order of things may be gained by looking at a few figures. A green brick, that is a brick newly made, weighs about five pounds. Each man carries out, during the forenoon, 500 moulds containing six bricks each and weighing thirty pounds. He therefore carried, in six hours, 15,000 pounds, not counting the weight of the wet pine mould, and ran out and back to the machine, except when the end of the row reached close to the machine. The tread-tender, besides keeping the bricks sanded, the water box filled, and the horse moving, shovelled 6,000 times five pounds of clay, raising it two or three inches above his head to lodge it in the machine, and carrying some of it from the outer edges of the pit, which were not less than eleven feet distant from the machine. It did not take long to test the metal of new beginners when they were put in to throw wet mud above their heads at the rate of 30,000 pounds in six hours. But men were found to do it, even when the producing capacity of the machine was put to double the output, or 60,000 pounds, and in one Brewer yard the record for one six hours' work reached 13,000 bricks of 78,000 pounds—nearly four tons of clay, and one man shovelled it and attended to his other duties. Well might a man look down upon the grassy ravines in the suburbs of Brewer, or other Maine towns, and exclaim, verily, "there were giants in the land in those days."

From 1830 to 1850, Maine increased rapidly in population, and the local demand for building bricks became of much importance. Brickyards sprang into existence like mushrooms in a night. Bangor felt the effects of the land craze of 1835-7, and many brick buildings were erected. The effect was shown in the numerous brickyards that began operations in Brewer, where the clay was most easily available. Wages fluctuated for fifteen or twenty years between \$10 and \$17 a month, for common hands, and between \$20 and \$30 a month for foremen. Expert burners received \$2.00 per day and their helpers, or after-tenders, received \$1.00 per day. These wages did not

include board, and \$8.00 a month were added where the crews were not boarded by their employers. This shows an increase in the cost of labor of \$10.00 a month at least, since the introduction of the Hobbs machine. There were in Brewer and Bangor, in 1855, about twenty-five brickyards, employing an average of six men to a yard and making, by the estimates of those days, 100,000 bricks per man in the course of a season. This shows the output of bricks in the two places at that time to have been about 15,000,000. There were twenty-two yards in the town of Gardiner, employing an average of three men to a yard, giving an annual output of 6,600,000. The Damariscotta and Sheepscot river brickyards were producing about 12,000,000. Cumberland county yards may be set down for about 6,000,000 at that time, and other yards throughout the State probably added 10,000,000 more to the output, bringing it up to about 50,000,000.

The industry furnished employment to 500 men for a season of five months, besides giving employment to choppers and teamsters engaged in preparing the 25,000 cords of wood necessary to burn the bricks. Forty millions of the bricks were probably shipped, Boston taking the bulk of them, though New Bedford, Provincetown and cities along the Sound, and even Providence, R. I., came in for a share. At about this time a trade with Newfoundland began, and several millions yearly, at various intervals, were shipped to St. Johns parties.

The general result of this trade was long-time credit, failure and ruin to many Maine brickmakers.

Not only had the cost of labor increased since the advent of the Hobbs machine, but there was an upward tendency in the cost of everything that entered into the manufacture of bricks, excepting the clay. The wood began to disappear from the immediate vicinity of the yards, and owners of wood lots had begun to learn the value of growing wood. The price of kiln wood ranged from \$1.75 to \$2.00 per cord, delivered. The figures of that period would read something like this, for the whole State:

500 common hands, 5 months, at \$15 a month.....	\$37,500.00
Board of 500 men, 5 months, at \$8 a month.....	20,000.00
25,000 cords wood at \$1.87.5.....	46,875.00
Cost of lumber, machinery, horses, etc., (1 year's use).....	7,000.00
Labor, burning 300 kilns (estimated at \$60 per kiln)	18,000.00
	<hr/>
Total expense.....	\$129,375.00

The average price of hard bricks was \$5 per 1,000, and of light hard bricks, \$3 per 1,000. About 10 per cent. of the kilns were light hards, so that the receipts figured up about like this:

45,000,000 hard bricks, at \$5 per 1,000.....	\$225,000.00
5,000,000 light hards, at \$3 per 1,000.....	15,000.00
	<hr/>
Total receipts.....	\$240,000.00

leaving a balance to be divided among the brick manufacturers of Maine, provided they were forehanded and foresighted enough to collect their bills, of \$110,000, or a little over a \$1,000 to each concern then operating. It must not be inferred from these figures that every venture into the manufacture of bricks was a profitable one, or that every year invariably brought general prosperity. There is probably no industry more tantalizing than brickmaking, and none where the promise of profit in the spring becomes so shadowy and elusive in the fall. The reasons for this are so various that it would require pages to exhibit them. Chief among the causes of loss was "bad luck" in burning the kilns. And I can do no better in attempting to describe the conditions that tended toward the bankruptcy of the brickmakers of mid century days, than to repeat the words of the oldest and most active and scholarly brickmaker in the State, to-day, William Morrell of Gardiner. Mr. Morrell says, in an article on old-time brickmaking, published in the September "Clay Worker": "Getting a good burn is no longer a matter of pure luck. Indeed, when it is remembered how kilns were managed fifty years ago, and the slovenly way in which they were constructed, the wonder is that they were ever burned at all. The boss-burner of those days was a character and belonged to a class which has now become extinct. In most cases he was

an old brickmaker who had become a superannuated philosopher by speculating on the wonderful discrepancy between the actual profits in the fall and those he had figured out with a piece of chalk and a shingle in the spring. He was wise, solemn and rheumatic, and was looked up to as an oracle by the younger men who had his wonderful experience yet to get. When the kiln was ready to fire, one of those old duffers was sent for and the performance began. The first two or three days his principal business seemed to be to sit around on the wood pile, where he would solemnly chew tobacco and entertain the astonished boys by stories drawn from his wonderful experience. After the water-smoke, (i. e., the steam from the bricks) was off he would rouse himself and get ready to show what he was there for.

“Up to this time the kiln had been running with both heads open, but now one head would be closed and the firing done all from the other head. When the wood inside the arches was burned out the kiln was allowed to stand until so cold in the bottom that no sign of heat could be seen by looking into the arches, when heating up again would be begun by running coarse wood the entire length of the arches with a long pole, which it required two or three men to handle. Fine wood was then darted on top of this until the arches were full to the jets, every man working as though the salvation of the kiln depended on that job being done in the briefest possible period of time. This process was repeated until the head was settled enough, when the fires were reversed and the same operation gone through with to settle the other head, the finishing touch being given by the burning of a few cords of alders, which was supposed to give color to the bricks. (The shrinking of the kiln produced by burning denotes the progress of the hardening process in the bricks.)

“When the kiln was opened, and the usual proportion of pale, hard and melted bricks found, in about equal parts, it was pronounced a good burn, and it was considered they had had ‘good luck’ in burning.

“These kilns were set up and covered with a temporary shed, which had to be removed as soon as the top of the kiln got hot, when the whole business—kiln, wood and workmen—were

exposed to the elements, with no protection whatever from either sun or rain, and it was considered a daring innovation, and rather a sign of degeneracy in the direction of effeminacy, when the writer of this, after having become nearly parboiled during a four-days' rain storm, conceived and executed the brilliant plan of devoting half an hour to putting up a temporary shed to work under. The old-timer occasionally comes around even now, and speaks rather contemptuously of the luxurious ways of the modern burner, and recounts with pride the hard times he has had in the scorching sun and soaking rain of former days."

The kiln of the olden time differed only in size from the kilns of to-day. Kilns now are built longer and higher than the early kilns. A modern Maine kiln is forty bricks high, forty-eight bricks long and five bricks wide for every arch it contains, averaging twelve arches to a kiln. From the top of the archway, where the jutting ends of the arch bricks meet, the bricks are set upon their edges in regular and alternating layers lengthwise and crosswise of the kiln to the top course. Spaces are left between every two bricks and these spaces form flues reaching from the arch to the top of the kiln, permitting the fire to play freely through the kiln. It is a beautiful sight to watch the tongues of flame issuing through the top of a burning kiln when the arches are filled, and it is surprising to note how quickly the application of wood beneath sends the fire streaming through the top of the kiln, through the height of about twelve feet of brick.

The methods of burning now differ from the old method only in the manner of getting the wood into the arches and in handling the heat when it is secured. The kilns are erected with more care and precision, and comfortable kiln sheds have taken the places of the shaky temporary roofs of the 40's. Men of good judgment have taken the places of those who trusted to luck and the inspiration of Medford rum, which was always a requisite with the old time burner, and melted bricks have for several years passed out of the regular sights of the Maine brickyard.

The growth of railroads throughout New England acted as a check to the development of brickmaking in Maine to any great

extent beyond the limit reached by it in 1855. Lines of railroad running in every direction through the state of Massachusetts discovered clay deposits nearly equal to those in Maine, and Boston, though requiring more and more bricks each year, found it unnecessary to make much greater drafts upon Maine brickyards. Maine cities were growing steadily, and Portland especially devoted herself to brick, and the suburban brickyards prospered. It is a notable fact that much of beautiful Portland's beauty was gained from her use of Portland-made brick in the building of business structures and residences. Portland bricks are remarkable for the rich color they take on in burning, and this added to the excellent taste of her architects in planning brick residences has made Portland conspicuously a beautiful city of brick. Along with other Maine industries, brick making felt the effects of the war and the output fell, in 1863 and '64 to the lowest point reached in half a century before. But with the close of the war came a boom. Bricks in Boston in 1865, after the surrender of Lee, rose to eleven dollars per thousand for common up and down lots. Vessel freights rose in sympathy to \$3.50 and \$4.00 a thousand, yet there was a great margin of profit for those who could deliver the bricks. Yards sprang into existence where they were never before thought of. Hancock county's first brick yard began operations that year, W. F. Hutchins of Penobscot being the pioneer. Since that time Hancock county has been a vigorous competitor in the brick markets. Wages of men rose in proportion to the increase in the number of yards. In 1865 common hands were paid from \$17 to \$20 a month and board, foremen received \$26 and \$30 and boss burners \$2.50 a day. In 1866 common hands received \$22 to \$24 a month, in 1867 about the same, and in 1868 it reached \$26 and remained at that figure until 1870. The demand from Boston began to grow fickle. Massachusetts and New Hampshire brickyards, by the aid of the railroads, began to monopolize the market. But Maine had begun to build. Factories were being erected on the Kennebec and Androscoggin, and the promoters of these enterprises imitated the action of the early settlers, that is, after locating the site of the factory they found a clay bank and manufactured the bricks

for the building. The greatest brickyards in the State were those fitted for the making of bricks for the private use of the projectors. The most notable of these were the Franklin Company's yard of Lewiston which had a yearly capacity of 3,000,000, the Edwards Manufacturing Company of Augusta of about the same capacity, and the yard of H. Purinton & Company at Winslow where the bricks for the Lockwood cotton mill of Waterville were made. This yard was fitted with Gage machines, a modified form of the Hobbs, and had a capacity of six millions. But these yards belong to a different class from the others, being operated purely for the purpose of furnishing material for the proprietors, and their existence, except Purinton's, ended when the object was attained, which was generally in not more than two seasons. They served, however, to give an impetus to the brickmakers' wages, and in 1870 and 1871 common hands were being paid \$30 to \$35 a month and board in Penobscot county yards, and from \$35 to \$40 a month and board in the Sheepscot river and Damariscotta yards. This difference in the scale of wages of the two localities continues up to now. The reason for it is in the difference of length in the working day in the two places. In the Penobscot river yards the day begins at five o'clock in the morning, while in Damariscotta the day's work begins at dawn. Along the Penobscot the day's work was, to within a few years, ended at 7 o'clock in the evening, while in Damariscotta the work only ceased when the light of day had completely faded away. In both sections breakfast at six A. M., dinner at 12 M., and supper at 6 P. M. were eaten in less than fifteen minutes each and the men resumed work at once. In recent years the Penobscot county yards have dropped the hour's work after supper and the Damariscottians still cleave to the good, old long day of the granddaddies. The Kennebeckers scoffed at the foolishness of both and claimed that men could do as much in an eleven hour day as they could in a fifteen hour day.

In 1870, the number of concerns engaged in making brick showed a falling away, but the yards in operation were producing at least twenty-five per cent more bricks than were being produced ten years before, and to add to this came the recently established yards of Hancock county, located in Penobscot,

Orland and Ellsworth, which turned out, all told, in the vicinity of 5,000,000. Maine must have exported in the neighborhood of 50,000,000, and she must have used herself at least 30,000,000. The average price in Boston at that time was \$9 per thousand and vessel freights averaged \$1.75 per thousand to Boston. A new machine began to make its appearance at this time. It worked on much the same principle as the Hobbs. It differed from the Hobbs machine in that the horse which turned the sweep to grind the clay also furnished the motive power for filling the moulds. The two operations became blended, thereby trebling the rapidity of striking and making it necessary to strike stiffer mud into the moulds. Instead of wetting the moulds to cause the brick to slip from them, fine sand was used. It required less skilled labor to operate this machine. While wages in the mudyards continued high, men were employed in sand machine yards at from \$14 to \$20 a month and board. The first machine of this kind was set up in the yard of the Bangor Brick Works and it has been in operation ever since.

The Chicago fire in February 1871 and the great Boston fire in 1872, had a wonderfully stimulating effect upon the brick business throughout the country, and in the fever following these events the demand far exceeded the supply for a short time. This set the inventors at work and the number of contrivances and devices for manufacturing all kinds of brick rapidly were soon thicker than the leaves on Vallambrosa, and out of a thousand inventions perhaps twenty were found applicable to the conditions of the clays in different sections, and two or three when given a fair trial have proven to be fully as well suited to the working of Maine clays as those before in use. The real effect of all the excitement was the establishment of immense brickmaking plants at various places throughout Maine and Massachusetts. Massachusetts found machines that would work her low grade and badly deposited clay at low cost and with excellent results. The machines were quickly at work and within six months the price of bricks in Boston fell from \$22 per thousand to \$6.50 per thousand. From \$6.50 the price rallied to \$7, \$8 and \$9 fluctuating back and forth as the supply increased or diminished. In 1873 the wages of com-

mon hands in Brewer reached \$50 per month and board, the average being between \$45 and \$50. In Wiscasset, the men received \$60 a month. Boss brickmakers received \$60 and \$75 and board, and in some cases bosses received \$100 and \$125 a month and board, on the Penobscot. Head burners received \$4 a day, and helpers \$2 and \$2.25, and boys who wheeled wood and chored around the yard were paid \$1.50 a day. Up to this time the little town of Brewer had held undisputed sway in the Boston market. The Brewer brick had made a reputation for excellence in the early fifties that clung to it even when improved machinery and improved methods in Eliot, Maine, and along the Piscataqua river in New Hampshire were filling the market with bricks equally as good, if not better. In the rush to make fortunes after the burning of Boston, Brewer somehow lost her excellent reputation, though her bricks held their own with others equally as good, and are yet above the average common bricks in quality. Among the new methods of making brick, introduced at that time, was the "Augur" machine. The augur machine (so called from the shape of the screw that ground the clay), was of various styles, the Chambers machine being then perhaps the most perfect. This machine was made in Philadelphia. It took the clay just as it came from the bank and ground it in a disintegrator which removed all lumps. Then it was worked through a long cylinder by a rapidly revolving screw which cut it and forced it in a solid mass, through a steel die. It issued from the die to a belt which carried it along in the shape of a smooth ribbon of mud, in thickness and width the size of a brick, to the knives which cut it into brick lengths. The bricks as they left the knives, were hard enough to stand hacking, and boys were employed taking them from the belt and wheeling them to the hacks. The machine had a capacity of 75,000 a day and required two or three skilled men to operate, the remainder of the work being performed by the very cheapest labor that could be found. Plants were erected in Brewer, Belgrade, Augusta, Portland, and in other parts of Maine. The Brewer Brick Company's plant cost at least \$100,000. Though the bricks were as beautiful to the eye, when burned, as the best Philadelphia repressed front bricks, for some reason they were condemned by builders. Those earlier plants operating the

augur machines gave up the ghost after a few seasons, the Brewer Brick Company continuing with sand machines for ten years, making 5,000,000 or 6,000,000 a year, and then went out of business.

The mud yards operating Hobbs machines, continued to flourish during all this time, except for a short period in 1874 and 1875. In those years bricks, owing to over-production and the general stagnation in all trades, fell off in price, and wages dropped accordingly.

In 1874, common hands received \$26 per month, foremen received \$35 to \$40 a month. Bricks sold for \$5 per 1,000. About the year 1875, off-bearing trucks were introduced. Up to that time the age-honored custom of lugging the bricks, one mould at a time prevailed. The trucks were made to hold five moulds. While one man struck his five moulds and was ready to start for the yard to dump them, the other man would have dumped his five and be ready to take his turn at the machine. The first object sought by the men who introduced the trucks was to lighten the labor of striking by cutting off four-fifths of the travel attendant upon the making of the bricks. The ultimate and unexpected result was an increase in the striking capacity of two men. From 6,000 in six hours, the stint for two strikers and a shoveller went to 8,000 and 10,000 and even reaching 12,000 frequently. The writer was one of two strikers who struck 12,700 bricks in six hours in 1886. The credit for the greatest six hours' work with a Hobbs machine and off-bearing trucks by two strikers, is given to two strikers in the yard of A. H. Gould in Brewer, in the season of 1886, 13,000 bricks in six hours. One man shoveled the clay into the machine. The trucks were first used by Almon H. Clark of Brewer. Improvements in many of the small tools and methods about the yards had been made from time to time, in the seventies. Among these were the shave for cutting the clay in the hill, rendering it capable of quicker drying and more easy handling, and the brick edger, designed to turn the bricks upon edge, for more perfect drying, after they had lain flat upon the yard half a day or more. The inventor of the edger was Charles Farrington, now a merchant in Brewer. The edger and the bank shave both have been great labor savers. They were necessary in order that the

usual three-men-to-a-machine crew might make the daily round of striking, filling tread, hacking and setting, that was expected of them and which with an output increased more than 33 per cent. it would have been impossible for them to do.

The St. John fire in 1877 came to the brickmakers of Maine as a light of hope in the midst of a dull season. As usual, there was a rush to meet the demand. Some wise manufacturers sold for cash at their own wharves. The price was from \$4.75 to \$5.50 per 1,000. More enthusiastic manufacturers sent cargo after cargo to St. John commission merchants, haphazard. Others trusted to the honesty of the buyers. Many of the cargoes so sent remained upon St. John wharves unsold until the expense had eaten them up. Hundreds of thousands of Maine brick sold on commission netted the manufacturers from \$1.50 to \$2.40 a 1,000. Portland and Brewer, alone, lost \$15,000 in St. John.

From 1880 to 1884, the brickyards along the water ways of Maine, experienced prosperous times. Boston was still the great market, but large shipments were made to St. Johns, N. F., to St. Pierre, Miquelon, to Florida and the West Indies. After those years, shipments by water dwindled. The yards of Eliot, Portland, Orland and Penobscot still sell in Boston, but other river yards depend entirely, and have for ten years at least, upon home consumption. Kennebec river yards ceased to export and many yards went out of existence. Various reasons are given for the change. One great reason is the multiplication of railroads and the reduction of railroad freights, another is the fact that Boston is no longer building near to its water front, and bricks may be brought 100 miles by rail more cheaply than they can be handled from a vessel and carted a mile to where they are wanted. Another reason is the improvement of processes for the making of bricks in clay deposits that formerly repelled the manufacturer.

The condition of the brick industry of Maine in 1885, is shown in the following table. The variance in the scale of wages of the different localities comes from the employment of the sand machines and other cheap labor machines in various localities. The muddyard scale varied little throughout the State:

MAINE BRICK INDUSTRY IN 1885.

Counties.	Number of yards.	Number of men.	Average wages per day.	Season's length—days.
Androscoggin	3	30	\$2 00	130
Aroostook	3	18	1 25	110
Cumberland	10	60	2 00	130
Franklin	1	4	1 75	130
Hancock	15	90	1 75	120
Kennebec	6	50	1 50	120
Knox	-	-	-	-
Lincoln	18	108	2 25	120
Penobscot	12	96	1 53	130
Piscataquis	2	8	1 00	78
Sagadahoc	3	12	2 00	130
Somerset	4	16	1 75	130
Waldo	4	17	1 75	120
Washington	4	14	1 50	120
York	11	86	1 50	130
	96	609	Av. \$1 53½	Av. 121

During the year 1885, Maine exported about 50,000,000 bricks and used about 43,000,000, a total of 93,000,000. The average net price was about \$5.50 per 1,000. The strike of the building trades' unions of Boston the year before, had a depressing effect upon the market which was felt until 1886.

Different methods of drying brick began to be introduced in Maine 20 years ago. One method, the pallet system, did away with the laying of the bricks upon the flat. Instead each mould was dumped upon a separate pallet and that pallet was placed in a rack where the bricks remained unhandled until dry enough to set in the kiln. Another method was kiln-drying, a process similar to that employed in drying lumber. The latter method is better suited to bricks made by stiff mud machines. The pallet system is in operation in the yards of William Lucas in Portland, and James A. Gray in Saco. The kiln-dryer is in

operation with success in the yard of The Hawkes Brick Works in Westbrook.

As some of the yards manufacturing common bricks by Hobbs machines ceased to export, inland yards which had introduced new methods and those which manufactured a high grade of brick, began to grow in importance and capacity. James Lucas of Portland, had for twenty years, been building the reputation of Portland front bricks. His bricks were made by Hobbs machines and not repressed, yet such was the skill and judgment used in manufacturing them that to the time of his death, in 1894, Lucas's Portland front bricks knew no fluctuations in the market. Other Hobbs machine bricks sold in Boston at from \$5 to \$8, but Lucas's fronts seldom failed to command \$12 per 1,000. His yards had a capacity of 3,000,000 annually, but that did not meet the demand for them in Boston and Providence. The sand struck bricks of James A. Gray of Saco, won an enviable reputation in the great markets, and his yard was enlarged to a capacity of 5,000,000 annually, all of which find a ready market. J. P. Norton's sand brickyard at York, has a capacity of 5,000,000. The front bricks of the Hawkes Brick Works of Westbrook, and the sand struck and front bricks of Marston & Durgin of Saco, are in demand throughout New England. The Hawkes Brick Works yards have a capacity of 3,000,000 annually, and Marston & Durgin will manufacture, this year, about 2,500,000. These yards rank in the first class of Maine brickyards at the present time.

The Fairfield yard of Horace Purinton & Co., manufacturing with Hobbs machines, and the yard of W. S. Hellier & Co., making with sand machines, are not behind the others in their equipment and in the quality of bricks produced. The Purinton yard's output is 5,000,000 yearly, the product of the Hellier yards is about 2,000,000. The entire product of these concerns finds a ready home market.

The weather of 1897 was the most unfavorable to brickmaking, of any season in the history of the State. Added to this was the effect of the general stagnation of business for several years past, and this has reduced the output for the year to about 50 per cent. less than the output of 1892.

One notable feature of the trade is the gradual but certain development of a higher grade of brickmaking. Builders and manufacturers have begun to realize that Maine clay is not excelled in quality nor in beautiful color when burned, by the clay in any section of the land. Maine front bricks, when properly made and carefully burned, excel even the famous Philadelphia front bricks. There is a life and a lustre to the coloring of the bricks which years of exposure to the weather fails to dim, as exposure certainly does dim Philadelphia fronts.

The processes of making bricks at the present day, then, are three prominent and important ones: The soft mud or Hobbs process, and the two forms of stiff mud processes, the sand machine and the augur machine. For front bricks, the choice lies between the Hobbs and the augur machines, with scarcely a shade of difference in the actual cost per thousand, when the aim is to make front brick by the Hobbs machine. For backers and common brick, the choice is between the sand struck and the Hobbs. Both have their admirers among brickmakers and builders, and here, as in the other case, the difference in cost is after all principally a matter of brickyard management. The difference in quality between the old fashioned brick and the new machine brick depends more upon the business sense and attention to small details of the manufacturers than it does upon the machine.

The season of 1897 has been unusually severe upon the brick-makers of Maine. The country is yet suffering from the general depression of business which followed the year 1893, and the weather has been the most unfavorable known in the history of the State. The manufacturers, with few exceptions, are hopeful. The price of brick will net \$5 per 1,000. Of the season's output about 50 per cent. will be shipped.

It is impossible, at this writing, to make a complete table of the season's work in the State, and the following table of estimates for 1897 are only approximately correct.

ESTIMATED BRICK INDUSTRY IN 1897.

Counties.	Yards.	Number of men.	Output.
Androscoggin	7	60	7,000,000
Aroostook	1	4	200,000
Cumberland	6	100	12,000,000
Franklin	-	-	-
Hancock.....	8	36	3,500,000
Kennebec	4	38	4,500,000
Knox	-	-	-
Lincoln.....	7	28	2,800,000
Oxford.....	1	6	600,000
Penobscot.....	5	60	6,100,000
Piscataquis	1	4	400,000
Sagadahoc.....	1	3	150,000
Somerset	1	8	400,000
Waldo	-	-	-
Washington	1	4	300,000
York	10	156	16,600,000
Totals	53	507	54,550,000

ABSTRACTS OF RETURNS FROM BRICKMAKERS.

The following notes have been received by the commissioner in reply to queries issued.

Wiscasset—Wiscasset Pressed Brick Company's yard is not in operation at present. Our process is the stiff mud process, and ours is the only plant of the kind in this locality. All other yards follow the early process with slight changes. I have found, since locating at Wiscasset, that the uncertainty of quick delivery by water and high freight rates by rail have tended to decrease the manufacture of bricks in Maine for the Boston market.

Saco—The old process of making by hand has entirely gone by. Many of us still make the water-struck bricks by machine, but we think the sand-struck bricks will soon take the place of the water-struck for a cheap brick, as they can be made much cheaper, and for a finer grade, the stiff mud process and other processes are fast coming into favor. The annual output of the two Saco yards is about 7,500,000 of water-struck, sand-struck and fancy front stiff mud process bricks. About 5 per cent. are shipped away, mostly to Boston. Marston & Durgin's stiff mud-face bricks are sold in Boston, Fall River and Providence, R. I. The Maine market takes about 2,000,000 of Saco bricks annually. There has been a gradual increase in the output for the past 12 or 15 years. This year will show quite a falling off, owing partly to the weather and partly to a weak demand. Twenty years ago we were paying \$1.25 to \$1.50 a day to men, while now we are paying for the same grade and in fact many of the same men, \$1.65 to \$2 a day. Twenty years ago, Marston & Durgin's crew was eight men. It is now from thirty to thirty-seven men. The present outlook is that all bricks made this year will go at fair prices.

Saco—The present process differs from the early process by making too many for the market. We have a well arranged pallet yard.

Gardiner—We shall try to get 235,000 bricks, this year, but bad weather and worse men are against it.

North Anson—Seven years ago, I made 1,000,000 bricks. I have 300,000 yet on hand. I expect to see prices higher, that all may live and let live.

Orland—Brick first made in Orland, 1865. Same old process now. This year's output 2,000,000; Boston takes all. Greatest output was from 1880 to 1890. Poorest years 1892 to 1896. Wages differ little from early days. Outlook promising.

Topsham—Bricks first made here 100 years ago. We make 150,000 and sell them at home every year. The outlook is brighter.

Bangor—Bricks were first made here about the year 1800. Machinery has displaced hand work. We make 2,000,000 to 2,500,000 sand-struck brick and find a ready market at home. The greatest output, 1870 to 1875. Least output from 1880 to 1883. Wages are from 15 to 20 per cent. less than 20 years ago. Outlook uncertain.

Dover—Outlook fair.

Wiscasset—Bricks were first made here more than 100 years ago. Wiscasset ships about 500,000 yearly to Boston. Greatest output was during the years 1892 and 1893. Wages are more than double what they were 20 years ago. The outlook is very poor.

Waterville—Greatest output, 1892. Least output, 1897. Wages are 20 per cent. more than they were 20 years ago. The outlook is good.

Auburn—Annual output of all yards in town, 3,000,000. Wages are 25 per cent. higher than 20 years ago. The outlook is improving.

Brewer—Smallest output in 75 years. Bricks made and set in kiln by contract for \$2 per 1,000. Contractor cleared \$1,200 in

making 850,000 with crew of six men. Wages of men \$45 per month. Cost of burning bricks, \$2 per 1,000. Bricks sell at \$5.25 per 1,000.

Waterville—Bricks made and set in kiln at \$1.75 per 1,000. cost of burning, \$2. Contractors make money at \$1.75 per 1,000 for making.

Walpole—Made only 50,000, this year. Outlook dubious.

Fort Kent—No bricks made now. Poor clay.

Sherman Station, B. & A. R. R.—No bricks made this year. We will make 300,000 to 500,000 next year. Excellent clay and a good show here.

Newcastle—I am 61 years old. When I was a boy they made bricks for the Boston market here and trod the mortar with oxen, then shovelled it out on a table and filled the moulds by hand, and lugged them out on the yard to lay them to dry. They then sold all grades together, light-hard and hard bricks. Wages were \$12 to \$15. Bricks commanded \$5 per 1,000 in Boston. Present prices are \$3.50 for light-hards; hard brick \$5. The average kiln made in our town contains 300,000 to 500,000. Men received \$60 per month and board in 1873. They now receive \$40 per month and board. This year shows the least output. Wages are but two-thirds of what they were 20 years ago. The outlook here is dark for small yards running the Hobbs machines and off-bearing trucks. The big corporations are beating us single handed. The present prices and small demand has stopped all of us. Where there were twenty yards running yearly there are three running now, all operated by one man. He keeps on making and holding for a rise. Bricks will sell better next year. I have a fine plant and would like a young practical brickmaker to help operate it. [Signed] W. G. Shattuck.

Orland—The first brick manufactured in Hancock county for shipment were made by William S. Hutchins of Penobscot, in 1850, and he continued in the same business in the same place 40 years. Powers & Saunders made the first bricks in Orland, in 1866. They were succeeded by F. B. Gross, and he has

operated the same yard ever since. The second yard in Orland was started in 1874 by A. H. Genn. The third yard was built by A. W. & A. B. Hutchins, in 1876, and they have continued the business there since. The annual output has been 1,000,000 every year. The highest price for bricks was received in 1872, \$15 a 1,000. Single cargoes sold as high as \$17. This gave a great impetus to brickmaking in this vicinity and several new yards were built. Before the season ended, the price of bricks fell to \$9. Prices continued to decline, reaching the lowest in 1877 and 1878, when the ruling price in Boston was \$5.50 per 1,000. At that time the three Orland yards employed 20 men at an average wages of \$20 per month and board. In 1887 and 1888, bricks sold at \$9 and \$9.25. From 1887 to 1890, there were ten yards in Orland employing 60 men, with average wages \$35 per month and board, with an annual output of about 6,000,000. During the same years Penobscot was doing nearly the same amount of business as Orland, and there were several other yards in Hancock county. The total output for the county in 1887 to 1890, would probably reach 15,000,000 per year. Orland has three yards, this year, employing 16 men with wages at \$25 a month and board. Output, 2,000,000. The town of Penobscot will present the same figures, this year, as Orland does. The process of making does not differ materially from the early process. We have simply improved upon the old method by having better arranged yards, so that we accomplish more work with the same number of men than formerly. Boston has always been our chief market, but of late Bar Harbor proves to be a good market. That town and the other Maine coast summer resorts, take about 25 per cent. of Hancock county's total output.

RAILROADS.

Table Showing the Number of Employes (excluding general officers) in the employ of Steam Railroads in Maine, Wages Paid, etc., for years ending June 30, 1896 and 1897.

Name of road.	Number employes, 1896.	Wages paid, 1896.	Number employes, 1897.	Wages paid, 1897.	AVERAGE DAILY COMPENSATION.	
					1896.	1897.
Bangor and Aroostook Railroad.	712	\$295,103 66	849	\$328,605 30	\$1 55	\$1 56
Boston and Maine Railroad	576	279,344 28	481	259,924 67	1 80	1 81
Bridgton and Saco River Railroad	34	15,209 86	32	13,521 72	1 49	1 52
Canadian Pacific Railway	349	174,106 04	386	166,263 94	1 59	1 51
Franklin and Megantic Railroad.	19	8,515 44	20	7,646 34	1 46	1 46
Georges Valley Railroad	10	4,033 95	10	3,611 40	1 00	1 00
Grand Trunk Railway	577	296,965 26	639	333,810 58	1 68	1 68
Kennebec Central Railroad	10	5,331 54	13	5,385 44	1 60	1 60
Lime Rock Railroad	21	10,730 12	20	9,974 58	1 71	1 70
Maine Central Railroad.	2,710	1,388,897 52	2,545	1,367,492 25	1 69	1 69
Monson Railroad	11	3,670 07	8	3,402 56	1 56	1 60
Patten and Sherman Railroad....	-	-	9	3,102 15	-	1 44
Phillips and Rangeley Railroad..	55	16,586 51	56	16,947 61	1 33	1 34
Portland and Rochester Railroad	252	104,089 57	215	102,394 06	1 59	1 64
Portland and Rumford Falls Railroad	190	64,172 72	221	74,206 51	1 47	1 51
Rockport Railroad	3	1,815 50	3	1,192 00	1 93	1 91
Rumford Falls and Rangeley Lakes Railroad	69	16,509 11	148	36,978 92	1 43	1 48
Sandy River Railroad	39	15,433 17	35	12,455 09	1 42	1 41
Sebasticock and Moosehead Railroad	9	3,638 00	11	3,674 00	1 42	1 05
Somerset Railway.....	54	24,340 85	57	25,542 36	1 44	1 46
St. Croix and Penobscot Railroad	30	10,937 86	32	11,232 89	1 38	1 31
Wiscasset and Quebec Railroad..	28	12,869 60	28	12,869 60	1 40	1 40
York Harbor and Beach Railroad	32	11,053 30	24	11,053 30	1 75	1 75
	5,742	\$2,763,353 93	5,842	\$2,811,287 47		

It will be seen by reference to the foregoing table, that the number of employes (excluding general officers) employed upon the steam railroads in Maine, for year ending June 30, 1897, was 5,842 men, against 5,742 in 1896, a gain of 100 employes. The amount paid for wages in 1897 was \$2,811,287.47, against \$2,763,353.93 in 1896, a gain in wages of \$47,933.54. The reports to the railroad commissioners by the steam railroads are quite complete regarding numbers employed and wages paid, and a careful examination of this part of the reports, while it discloses the fact of an increase of employes, and consequent increase of wages paid, also shows that this gain has been brought about mainly by enlarging the force upon the Bangor & Aroostook Railroad, Portland & Rumford Falls Railway, Rumford Falls & Rangeley Lakes Railroad and the Canadian Pacific Railway. The Bangor & Aroostook Railroad, while increasing its force thirty-seven men, has maintained the same average daily compensation, adding thereby \$23,501.64 to its pay roll. The Canadian Pacific Railway increased its number of employes thirty-seven, but made such a reduction of wages that its pay roll was reduced \$7,842.10. The Portland & Rumford Falls Railway increased its number of employes thirty-one and slightly increased its average daily compensation, making a gain in amount paid out for wages of \$10,033.79. The Rumford Falls & Rangeley Lakes Railroad increased the number employed seventy-nine and made a small increase in its average daily wages, increasing the amount paid over 1896, \$20,468.81. The Maine Central Railroad, the Boston & Maine Railroad, and Portland & Rochester Railroad reduced their number of employes. The Boston & Maine and Portland & Rochester Railroads made a reduction in number of employed of about 14 per cent. The Maine Central Railroad, however, were able to maintain its help with a loss of only about 6 per cent. Upon all these systems, the wages of 1896 were fully maintained. It is but proper to say that the railroads were confronted with adverse conditions of traffic, and that there must be a reduction of expenses, by reducing somewhat the expenditures in the labor department, either by reducing the daily pay or by reducing the force. It only requires a return of more prosperous business activity to bring about a

restoration of the numbers employed. In fact, the loss of so small a number from the pay roll of these railroads may well be regarded as a source of congratulation.

When 25,000 persons are wholly dependent upon the employment by railroads, it is of great consequence that not only there shall be sufficient traffic, but that such compensation may be had for conducting the traffic as will allow a liberal policy in the employment of men and wages paid.

The street railways in Maine employ a little more than 600 men, and, as near as can be ascertained, pay out more than \$300,000 in conducting their business.

It will be seen by the foregoing exhibit that nearly 30,000 persons in the State are now receiving their support by the operations of the railroads in Maine, receiving therefor very nearly \$3,200,000.

There was in operation on November 30, 1897, 161 miles of street railways, and their earnings for the year ending June 30, 1897, amounted to \$770,614.19.

The probable increase of the mileage of street railways, and steam railroads, the coming year, gives promise of not only increasing the regular force of employes upon railroads, but of giving employment to many others, resulting in all respects to the advantage of labor.

SUMMER RESORTS.

The investigation of the summer resort business, as reported in the following tabulations and descriptions, is merely supplementary to the more extended work done by the Bureau on this line in 1893. Its main purpose has been to ascertain the general conditions of the business. The returns received from hotels and boarding houses cover but a small part of the entire list, about 600, in the State, while information from camps and cottages is more full and complete than that heretofore given. These returns indicate an increase in the business, and show that Maine's summer resorts and her fish and game, are a source of income to the State of great and constantly growing extent and importance.

When it is considered that almost the entire State has become a pleasure park; that, during the "heated season," nearly every section has its quota of visitors from beyond the limits of the State; that our woods and lakes, as well as our hills and shores are visited by thousands whose temporary habitations are camps and tents, and whose names are not found upon the registers of large and fashionable hotels; that the pursuit of game and fish by this class of visitors has furnished, during the past season, remunerative employment to 1,316 registered guides, the enormous extent of the summer tourist business of Maine can be understood and appreciated, and justifies the claims of well-informed authorities, that more than 200,000 visitors and \$10,000,000 have been brought into the State, during the past season, through the attractions of our summer resorts.

Returns from Hotels

AROOSTOOK

Consecutive numbers.	Name of house.	Proprietor or landlord.	Postoffice.	Capacity.	Number of guests in 1896.	Number from out of State.
1	Elliott House	L. S. Elliott	Orient	50	7,840	2,709
2	Bangor and Aroostook	N. Durepo	Limestone	30	1,800	350
3	Eagle House	Mrs. D. Gagnon....	Fort Kent	50	2,000	500
4	Waverly Hotel.....	Daniel Fornier....	Wytopitlock	15	200	10
5	Bell Hotel.....	L. L. Bell.	Wytopitlock	25	500	10
6	Littleton House	S. T. Milberry. . . .	Littleton	20	800	18
7	Ashland House	D. O. Orcutt.....	Ashland	30	3,000	500
8	Exchange	Thomas Campbell..	Fort Fairfield....	60	4,000	2,000
9	Windsor	W. D. Haley.....	Fort Fairfield....	84	3,000	800
10	Hotel Burleigh	A. W. Scott.....	Caribou	100	7,300	2,000
11	Boarding House	Wm. H. Henderson	Allagash	10	25	-
12	Vaughan House	B. J. Smith & Son..	Caribou	125	5,482	1,500
13	Hotel Exchange	Buzzell Bros.....	Houlton	150	10,950	3,000

CUMBERLAND

1	Granite Spring House.	Ernest Ponce	Long Island.....	120	750	375
2	Jillson Farm House...	E. B. Jillson	East Otisfield	22	30	7
3	Raymond Spring	Chas. E. Small	North Raymond	25	214	112
4	Pine Grove Farm.....	John H. Hayden....	Raymond	15	23	6
5	Peaks Island House...	Eben A. Sawyer....	Peaks Island.	150	800	350
6	Hotel Naples.....	Geo. W. Hall.....	Naples	30	657	119
7	Central House	Wm. H. Smith.....	Raymond Village	32	1,500	-
8	Ridge House	Capt. L. Hamilton.	Cousins Island	30	24	24
9	Bay View House	J. M. Bucknam	Yarmouth	20	15	15
10	Lake View House	Moses Spiller	East Otisfield	12	9	8
11	Oceanic House	Mrs. R. T. Sterling.	Peaks Island.....	50	190	175
12	Valley View House...	Wm. S. Trefethen..	Peaks Island.....	45	93	60
13	Overlook Cottage...	Chas. M. Trufant ..	Bridgton	15	42	34
14	Crockett House	Mrs. L. P. Crockett	South Naples.....	25	250	75
15	Lake View Hotel	Thos. J. Brown	East Raymond	12	8	4
16	Union House	James B. Jones....	Peaks Island.....	100	400	-
17	Dingo House	N. E. Allen	Long Island.....	80	-	-
18	Harbor View House...	Mrs. E. L. McIntosh	Peaks Island.....	28	180	131
19	The Southgate	J. M. Kaler	Prout's Neck.....	100	200	200

HANCOCK

1	The Rockland.....	Herman L. Savage.	N. E. Harbor	150	320	286
2	Kimball House	L. E. Kimball....	N. E. Harbor	200	1,000	1,000
3	Hotel Islesford	Loring A. Stanley.	Islesford	45	40	25
4	West End Hotel	John W. Wheaton....	Bar Harbor.....	400	12,000	10,000
5	Castine House	J. M. Vogell.....	Castine	30	125	100
6	The Acadian	W. A. Walker	Castine	100	500	400
7	Seaside Inn	A. & J. Clement....	Seal Harbor	160	275	250
8	Woodbine Terrace	Melroy A. Flye	Brooklin	12	15	11
9	The Lookout	Owen L. Flye	Brooklin	30	40	40
10	Buck's Harbor Inn	Lewis F. Gray	So. Brooksville	60	40	20
11	Stanley House	E. Benson Stanley.	Manset	120	120	120
12	Grindstone Inn	C. B. Cleaveland....	*Winter Harbor..	100	190	165
13	Bay View House	W. H. Freeman....	Pretty Marsh	25	15	15
14	Wasson Homestead	Jeremiah Jones....	West Brooksville	10	5	5
15	.....	Chas. McCluskey ..	Castine	25	72	63

* No. 52 Devonshire street, Boston, Mass., is Mr. Cleaveland's permanent address.

and Boarding Houses.

COUNTY.

Consecutive numbers.	Received from guests from out of State.	1897 Compared with 1896.		Weeks open.	Number employes.	Employes' wages.	Paid for farm products.	
		Per cent.						
		More.	Less.					
1	\$9,068	More	.05	-	52	14	\$2,252	-
2	525	Same	-	-	52	6	1,500	\$2,500
3	5,000	More	.15	-	20	15	-	900
4	35	More	.10	-	52	4	-	-
5	40	More	.10	-	52	4	-	-
6	-	More	.30	-	52	3	-	-
7	-	Same	-	-	34	10	-	-
8	5,000	More	.02	-	22	10	-	1,200
9	-	More	.25	-	52	12	-	865
10	-	-	-	-	-	20	-	-
11	50	Same	-	-	16	4	-	-
12	3,750	More	.10	-	52	14	3,228	1,600
13	3,000	Same	-	-	52	18	2,650	-

COUNTY.

1	8,000	More	.10	-	12	18	1,900	1,500
2	425	Same	-	-	12	3	120	-
3	600	More	1.00	-	52	8	360	-
4	50	Same	-	-	9	1	30	-
5	-	More	.10	-	12	28	-	-
6	2,500	Less	-	.20	13	8	300	-
7	-	More	-	-	52	3	250	-
8	800	Less	-	-	8	2	30	-
9	120	More	.08	-	13	3	-	-
10	100	Less	-	-	13	-	-	-
11	-	Less	-	.30	12	9	350	-
12	-	More	-	-	12	10	360	-
13	720	More	-	-	16	5	150	-
14	-	More	-	-	26	2	150	-
15	104	More	-	-	8	1	10	-
16	-	More	.10	-	16	13	800	-
17	-	More	.25	-	16	10	1,200	-
18	-	Less	-	.50	12	6	240	-
19	-	More	.10	-	12	16	1,000	550

COUNTY.

1	11,163	Same	-	-	16	53	1,478	727
2	40,000	Same	-	-	15	75	4,000	3,000
3	1,200	Same	-	-	11	10	350	500
4	5,250	More	2.00	-	15	86	1,066	-
5	1,327	Same	-	-	52	7	422	100
6	8,000	More	.05	-	12	22	1,400	1,260
7	10,000	More	.10	-	12	35	1,300	1,000
8	250	More	.38	-	28	2	33	-
9	1,100	Less	-	.20	20	5	300	75
10	-	More	.50	-	15	5	150	200
11	-	Same	-	-	14	26	900	-
12	-	More	.10	-	14	42	-	-
13	250	Same	-	-	15	3	140	-
14	-	More	.25	-	52	2	-	-
15	-	Same	-	-	9	5	150	-

Returns from Hotels

KNOX

Consecutive numbers.	Name of house.	Proprietor or landlord.	Postoffice.	Capacity.	Number guests in 1896.	Number from out of State.
1	Mountain View House	F. O. Martin.....	Camden *.....	75	270	225
2	Ocean House.....	R. D. Rawson	Owl's Head	16	18	14
3	.....	E. A. Young.....	Matineus	20	40	20

LINCOLN

1	Squirrel Inn.....	K. H. Richards.....	Squirrel Island ..	150	1,575	1,025
2	The Edgemere	W. G. & W. W. Tibbetts	Pemaquid Harb'r	100	400	375
3	Summit House.....	N. W. Gamage & Son	South Bristol ...	50	100	100
4	Point of View House..	C. S. Gray	Southport	30	60	40
5	Anchorage	M. R. Gamage.....	South Bristol ...	20	21	21
6	Rutherford Cottage ...	Edward Thorpe....	Christmas Cove..	40	60	-
7	Devon Rocks	W. Scott Pierce....	Southport	20	38	38
8	Sea View	T. H. Hanson.....	Squirrel Island ..	20	55	30
9	Homestead	Albert C. Thorp....	Christmas Cove..	12	18	18
10	Samoset House	J. C. Durrell.....	Mouse Island	100	1,000	800

OXFORD

1	Lake View	Mrs. J. M. Farrington..	Lovell Center....	25	35	35
2	Palmer House	H. W. Palmer	Lovell Center....	10	8	8
3	Spring Cottage	C. E. Spring	Brownfield	10	5	5
4	Maple Lane Farm.....	E. P. Grover	West Bethel	30	40	20

PENOBSCOT

1	Katahdin House.....	S. B. Gates	Winn	45	4,000	1,000
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PISCATAQUIS

1	Mt. Kineo House	O. A. Dennen	Kineo	400	5,000	3,000
2	Moosehead Inn	A. H. Walker.....	Greenville Junc..	150	14,000	7,000
3	Lily Bay House.....	A. Bradeen.....	Lily Bay.....	30	500	500
4	Lake Hotel.....	Burton M. Packard	Willimantic	22	800	300
5	Silver Lake Hotel	W. Heughen... Kat	ahdin Iron Works	80	150	50
6	Deer Island House ...	E. A. Capen.....	Capen's.....	25	250	150

SOMERSET

1	Hotel Newton.....	C. A. Coleman	Jackman	40	3,784	1,946
2	Armstrong House.....	Henry Armstrong .	Jackman	40	2,000	200

WALDO

1	Islesboro Inn	H. L. Brown	Dark Harbor	125	250	245
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* Address, Martinsville, Maine, from October 1 to June 1.

and Boarding Houses—CONTINUED.

COUNTY.

Consecutive numbers.	Received from guests from out of State.	1897 Compared with 1896.		Weeks open.	Number employes.	Employes' wages.	Paid for farm products.	
		Per cent.						
		More.	Less.					
1	\$2,400	More .....	.25	-	13	12	\$500	\$500
2	388	Less	-	-	17	3	87	-
3	70	Less	-	-	17	3	-	-

COUNTY.

1	12,000	Less	-	.10	12	35	1,818	1,300
2	2,500	More .....	.300	-	12	15	350	700
3	2,700	More .....	.10	-	13	10	300	-
4	500	Same	-	-	18	4	120	125
5	610	Same	-	-	11	2	77	-
6	1,364	More .....	.20	-	12	5	180	-
7	600	Less	-	.40	10	2	40	-
8	800	Less	-	.10	8	4	100	450
9	400	Same	-	-	10	1	32	-
10	-	Less	-	-	8	25	-	-

COUNTY.

1	955	Less	-	.20	13	4	154	-
2	-	Same	-	-	14	1	-	-
3	-	More03	-	11	3	90	-
4	1,100	Less	-	.80	12	3	108	-

COUNTY.

1	9,500	Less	-	.05	52	13	750	-
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COUNTY.

1	75,000	More05	-	25	150	16,000	15,000
2	20,000	More10	-	20	30	4,000	1,200
3	3,000	Same	-	-	20	12	1,000	50
4	3,500	More .....	.12	-	23	7	850	250
5	-	More	-	-	-	25	-	150
6	-	Same	-	-	26	7	-	-

COUNTY.

1	7,784	Less	-	-	52	8	1,986	-
2	-	Less	-	-	30	5	-	-

COUNTY.

1	20,000	Same	-	-	12	56	4,000	-
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Returns from Hotels

WASHINGTON

Consecutive numbers.	Name of house.	Proprietor or landlord.	Postoffice.	Capacity.	Number guests in 1896.	Number from out of State.
1	The Hillside	W. J. Mahlman ...	Lubec	50	500	200
2	American House	I. E. Rier	Lubec	50	75	10
3	The Sunshine	Annie M. Pearey ..	Lubec	6	10	7
4	Wadsworth	Mrs. G. F. Wadsworth ..	Eastport.....	12	50	40
5	Lake View House....	C. B. Ripley....	Grand Lake Str..	20	50	15
6	Grand Lake House....	William Brown....	Grand Lake Str..	20	50	20

YORK

1	Marshall House	E. S. Marshall.....	York	250	1,000	1,000
2	Lawrence Cottage. ...	Mrs. K. H. Small...	Old Orchard.....	45	300	209
3	Wentworth's	Owen Wentworth ..	Kennebunk B'ch.	100	271	271
4	The Champernowne ..	Horace Mitchell...	Kittery Point....	175	150	150
5	Yorkshire Inn	W. G. Varrell	York.....	65	300	300
6	Granite State House ..	Alvin Stuart	Kennebunk B'ch.	80	150	150
7	Eagle Rock.....	Joseph D. Wells ..	Kennebunk B'ch.	75	200	170
8	Bay View House	E. Manson & Son...	Bay View	200	600	588
9	Garrison House.....	John H. Sanborn...	York Village. ...	75	140	134
10	Alfred House	C. U. Burbanks.....	Alfred	40	1,500	500
11	Gorham House	S. W. Holt.....	Old Orchard.....	50	500	300
12	Malvern House	Mrs. A. W. Field...	Old Orchard.....	30	79	56
13	Lynn Cottage.....	S. W. Boyden	Old Orchard.....	40	190	67
14	Ocean Rock Cottage..	C. A. Davis.....	Old Orchard.....	35	110	95
15	Western House	Mrs. J. A. Thomas..	Old Orchard.....	50	300	250
16	Weeman's	C. E. Weeman.....	Parsonsfield	12	5	5
17	The Pocahontas	H. A. Cobb.....	Kittery Point....	200	500	450

and Boarding Houses—CONCLUDED.

COUNTY.

Consecutive numbers.	Received from guests from out of State.	1897 Compared with 1896.		Weeks open.	Number employes.	Employes' wages.	Paid for farm products.	
		Per cent.						
		More.	Less.					
1	\$2,000	Same	-	-	16	7	\$300	\$350
2	400	Less	-	.10	13	6	160	175
3	350	Less	-	-	13	1	26	-
4	200	Less	-	.10	16	4	100	200
5	-	More .....	.05	-	28	3	-	-
6	-	More .....	.20	-	20	3	-	-

COUNTY.

1	40,000	More .....	.20	-	12	100	5,000	-
2	2,000	Same	-	-	10	9	250	400
3	6,271	Same	-	-	12	25	440	-
4	11,000	More .....	.40	-	16	42	1,500	1,500
5	7,500	Less	-	.15	14	15	800	500
6	2,500	More	1.00	-	14	14	325	-
7	4,000	More .....	.10	-	13	15	798	800
8	-	Same	-	-	12	55	3,000	3,500
9	3,600	Less	-	.25	12	13	450	-
10	500	Same	-	-	52	10	600	-
11	2,000	Same	-	-	14	15	-	500
12	392	Less	-	.25	12	4	80	-
13	475	More .....	.10	-	10	8	87	75
14	700	More .....	.50	-	12	6	150	235
15	1,800	Less	-	.33	10	9	175	150
16	100	More	1.00	-	13	-	-	-
17	13,500	Same	-	-	13	30	200	1,500

The above table contains returns from ninety-seven summer hotels and boarding houses, only a fraction of the total number in our State, yet the number of guests entertained foots up 108,736, 45 per cent. of whom, or 48,942, were from outside of the State. In the columns of percentages of increase and decrease in business over the previous year, forty show an increase varying from 3 to 300 per cent., sixteen show a decrease varying from 5 to 50 per cent., while forty-one show no material change in the business or are not indicated.

Seventy houses give the amount received from guests from outside the State, which foots up \$386,096, or an average for the houses, great and small, of \$5,516. Seventy-three give the amount paid for help, footing up \$76,552, or an average of \$1,049.

The omission in many returns of the amount paid for farm, garden and dairy products is accounted for by the fact that very many hotel proprietors run farms or large gardens in connection with their business and so raise a part or the whole of these products.

GUIDES AND SPORTING CAMPS.

The following is a list of sporting camps run by guides, so far as this office has been able to obtain them, in Aroostook, Northern Penobscot and Piscataquis counties. In collecting this data, covering so great an area of territory, it is likely that some errors may have crept in, and it is doubtless incomplete. The names of guides and location of camps are severally given under the head of the home post office of the guides, alphabetically arranged by counties.

AROOSTOOK COUNTY.

Ashland.

Ira D. McKay, camps at Big Fish Lake, Greenlow Stream, Big Machias Lake, Pratt Lake.

Leon W. Orcutt, camps at Big Fish Lake, South Branch Machias, Greenlow Stream, Number Nine Lake.

R. D. Porter, camp at St. Croix Lake.

Bridgewater.

Clarence Farley, camp at Number Nine Lake.

Willard Packard, camp at Number Nine Lake.

Easton.

A. J. Whitcomb, camp at Presque Isle Stream.

Hersey.

Davis Brothers, camp at Chase Mountain.

Houlton.

D. L. Cummings, camp at Square Lake, Fish River.

Charles West, camp at Beaver Brook.

Linneus.

B. A. Byron, camp at Beaver Brook.

Masardis.

George T. Dine, camp at Black Water.

Moro.

——— McMann, camp at Alamakoukus.

Will Rigby, camp at Rockabema.

Oxbow.

William Atkins, camps at Little Millinockett Lake, Millinockett Lake.

John Keating, camp at Mendungan Lake.

Clarence Peavey, camps at Chandler Brook, Umcolcus Stream.

Spearing & Arbo, camps at Allagash River, Pleasant Lake, Spider Lake.

Perham.

Frank Curtis, camp at Perham.

George H. Huston, camp at Coe Township.

Robert McKay, camp at Perham.

Robinsons.

John F. Ketchum, camp at Presque Isle Stream.

Sherman Mills.

L. H. Perry, camp at East Branch Penobscot.

Smyrna Mills.

Louis Bell, camp at St. Croix Lake.

James Ireland, camp at East Branch Penobscot.

Solomon Perkins, camp at St. Croix Lake.

Fred Scholer, camp at St. Croix Lake.

F. H. Stimpson, camps at Umcolcus Lake, Cut Lake.

Sprague's Mills.

Hazen E. Huson, camp at Squa-Pan Lake.

W. Richardson, camp at Portage Lake.

Charles Southard, camp at Blaine.

Westfield.

Arthur Winslow, camp at Presque Isle Stream.

PENOBSCOT COUNTY.

Costigan.

Walter F. McPheters, camp at West Branch Penobscot.

Grindstone.

F. G. Cram, camp at Grindstone.

Alex. Robinson, camp at Grindstone.

Lee.

Sidney Dwelley, camp at Carry Farm.

Norton & Dwelley, camp at Upper Dobsis.

Mattawamkeag.

W. B. Robinson, camp at Mattaceunk Lake.

Norcross.

Llewellyn Boynton, camp at Millinockett Lake.

H. R. Cushman, camp at Nahmakanta Lake.

Frank Gerrish, camp at North Twin Lake.

Luther M. Gerrish, camp at North Twin Dam.

Luther Green, camp at South Twin Lake.

Charles Hale, camp at Millinockett.

D. W. Hopkins, camps at Nahmakanta Lake, Muskrat Pond.

I. O. Hunt, camp at Millinockett Lake.

Charles T. Powers, camp at Millinockett Lake.

Walter C. Heath, camp at Sourdnahunk Lake.

John Powers, camp at Millinockett Lake.

Victor Scott, camp at Millinockett Lake.

Stinchfield & Heath, camps at Pemadumcook Lake, Rainbow Lake, Joe Mary Lake.

Old Town.

Joseph Francis, camp at Debsconeague Dead Water.

Louis Ketchum, camps at Nahmakanta Lake, Rainbow Lake.

William Moriarty, camp at Nahmakanta Lake.

Peter W. Ronco, camp at West Branch Ponds.

Patten.

- C. R. Brown, camp at Sourdnahunk.
 Butterfield Brothers, camp at Seboeis River.
 Wesley Butterfield, camp at Lunckersean Pond.
 B. C. Coburn, camp at East Branch Penobscot.
 C. C. Coburn, camp at Little Spring Brook.
 George Cooper, camp at Grand Lake.
 Lewis B. Cooper, camp at Seboeis River.
 A. Crommett, camp at Second Lake.
 Orville A. Crommett, camp at East Branch Penobscot.
 Stephen Giles, camp at Seboeis Lake.
 W. S. McKenney, camp at Madley Bog.
 Frank McKenney, camp at Hay Lake.
 Ira McKinney, camp at Seboeis Lake.
 Murray Mason, camp at Hay Brook.
 Calwell Nason, camp at Hay Brook.
 Linn Palmer, camp at Seboeis Stream.
 A. McLain & Son, camp at Sourdnahunk Lake.

Springfield.

- W. O. Shaw, camp on Lower Dobsis Lake.

South Springfield.

- A. E. Gowell, camp on Junior Lake.
 Grindell & Hanscomb, camp at Lower Dobsis Lake.
 G. L. F. Ball, camp at Lower Dobsis Thoroughfare.

Staceyville.

- Fred Brackett, camp at East Branch Penobscot.
 M. M. Tracy, camps at Katahdin Lake, Mud Brook.

West Seboeis.

- James O'Neal, camp at West Seboeis.
 Daniel Pomroy, camp at West Seboeis.
 Norman Smith, camp at Hammer Island.
 Eugene Smith, camp at Hammer Island.
 Nelson McNaughton, camp at West Seboeis.

Winn.

- Hiram Davis, camp at Mattaceunk Lake.

PISCATAQUIS COUNTY.

Abbot.

- J. B. Greenleaf, camp at Whetstone Pond.
E. W. Hussey, camps at Whetstone Pond, Piper Pond.

Abbot Village.

- C. G. Smith, camp at Kingsbury.

Blanchard.

- Manley S. Tyler, camp at Russell Mountain.

Brownville.

- Benjamin C. Harris, camp at Ebeeme Pond.
Elmer E. Harris, camp at Ebeeme Pond.
Bert F. Hobbs, camp at Joe Mary Lake.
Z. B. Knight, camp at Knight's Landing.

Boyd Lake.

- B. L. Fowles, camp at Pemadumcook Lake.

Chessuncook Lake.

- Thomas Smart, camp at Chessuncook Lake.

Greenville.

- Fred D. Bigney, camp at Greenville.
Frank Capino, camp at Allagash.
John Hall, camp at Spencer Bay.
Bigney & Rowe, camp at Sandy Bay.

Greenville Junction.

- Samuel Cole, camp at Moosehead Lake.
Andy Kennedy, camp at Ragged Lake.

Guilford.

- Ed Hussey, camp at Piper Pond.

Katahdin Iron Works.

- Albert Brown, camp at Long Pond.
Martin Conley, camp at West Branch Penobscot.
John Coughlin, camp at B Pond.

David Hutchins, camp at B Pond.
 Charles Randall, camp at West Branch Pond.
 Phil Randall, camp at West Branch Pond.
 Frank Tibbetts, camp at Big Houston Pond.
 N. M. Welch, camp at West Branch Penobscot.
 E. G. & L. P. Moore, camp at Township 7, R. 9, N. W. P.
 G. I. Brown & Son, camp at Pleasant River.

Lake View.

W. L. Hodkins, camps at Five Islands, East Seboeis.

Milo.

A. D. Bumps, camps at Saddle Rock Mountain, Joe Mary Pond.

Charles Harris, camp at Joe Mary Lake.
 W. L. Hobbs, camp at East Seboeis.

Milo Junction.

F. E. Tibbetts, camp at Houston Pond.

Monson.

Lane & Davis, camp at Long Pond.
 J. S. Leeman, camp at Long Pond.

Moosehead.

F. R. Higgins, camp at Cowan's Cove.

North East Carry.

Joseph Smith, camp at West Branch Penobscot.

Onawa, via Henderson.

Young & Buxton, camp at Onawa Lake.
 E. C. Morrill, camp at Onawa Lake.

Roach River.

B. J. Woodard, camp at Roach Pond.

Schoodic.

Benjamin Ballard, camp at Schoodic.
 Reuben Bartlett, camp at Schoodic.
 Fred Brown, camp at Moose Horns Camp.

Alfred Haskell, camp at Moose Horns Camp.
A. R. Haskell, camp at Northwest Pond.
——— Hawthorne, camp at Philbrook Farm.
B. C. Hobbs, camp at Joe Mary Lake.
Ernest Knight, camp at Schoodic House.
James Bridge, camp at Five Islands.

Sebec.

George Esler, camp at Caribou Bog.
Ed Rankin, camps at Buttermilk Pond, Long Pond.

Shirley.

A. T. Mitchell, camp at Shirley.

SPORTING CAMPS AND HOUSES NEAR BANGOR.

The greatest resort for fishermen in Penobscot county is Pushaw lake, seven miles northeast from Bangor. According to the most reliable data, it is learned that fully 20,000 persons annually take their outings, for a longer or shorter period, at this popular resort, expending over \$50,000 in the course of the season. The largest hotel, the Lakeside, is managed by Louis A. Greyer, and accommodates fully 3,000 guests in the course of the six months during which it is open to the public. The Perch House, one mile south of the Lakeside, accommodates over 1,000 in the course of the season. There are, besides the hotels, many boarding houses and private cottages. The Niben Club house, built the past season, is an ornament to the place.

Hermon Pond, nine miles west of Bangor, is reached directly by the Maine Central Railroad, and is visited by fully 5,000 people annually. William Smith, at Smith's landing, cares for a large number and owns a score of boats for the accommodation of fishermen. Of the 25,000 who visit Pushaw Lake and Hermon Pond, fully 5,000 come from outside of the State, and their expenses during their temporary sojourn here amount to over \$25,000.

At Eddington Pond, a modern house is run by W. A. Billings. The house faces the pond and commands a fine view of the surrounding country. Mr. Billings averages a dozen permanent boarders and often runs above a hundred transients on Sundays.

William Davis at Chemo Lake, eleven miles east of Bangor, accommodates, in the course of the year, fully 1,000 guests, one-half of whom are Massachusetts hunters and fishermen. The receipts from outside sportsmen in every way must foot up \$5,000 annually.

There are many small camps along all these ponds which are rented to sportsmen and frequently are used as temporary hotels.

Cold Stream Pond, in Enfield, is a great resort for togue fishermen. Silas McKenney keeps a well-arranged house for the accommodation of fishermen and hunters. He feeds and lodges about 500 sportsmen from out of the State in the course of a year, besides a very large number of Maine people. It is estimated that during the season of ice fishing that the number of fishermen on Cold Stream Pond will average 100.

Fields' Pond, on a carriage road five miles from Bangor, is a circular sheet of water about one mile in diameter. It contains pickerel, black bass, yellow perch, and occasionally a land-locked salmon is caught. Fields & Smart keep boats and have stabling for horses. Twenty flat-bottomed boats, principally punts, are for rent. The season begins May 10th and ends September 1st. About 8,000 people visited the pond in the summer of 1897. The place is chiefly patronized by pupils of the public schools and Sunday school picnics, that come out from Bangor to pass the day. There are no cottages on the shores. The pond lies between Orrington and Holden.

Hinds' Pond, locally known as Brewer's Pond, is on a carriage road by way of East Orrington, eight miles east from Bangor. This pond is three miles long and a mile wide, and is next above, flowing into Fields' Pond. It contains all the species of fish found in Fields' Pond, and in addition is well filled with land-locked salmon, great catches being made there during the summer of 1897. There are five new cottages on the shores of this pond of a value of about \$4,000. At the head of the pond, near East Bucksport, Henry Oliver Hinds has twelve row boats for rent and his stables can accommodate fifteen horses. This pond is not patronized by the picnic parties to any great extent, but men in search of fish are making it a popular resort for sport. About 3,000 persons, 90 per cent. of whom were fishermen, visited this pond during the season of 1897.

Phillips' Pond, eleven miles from Bangor, is a short distance from the old Bangor and Ellsworth stage road. This pond is located in Dedham, Hancock county, and contains about 3,500 acres. Eight cottages, having a total valuation of \$5,000, are

on its shores. There is also a hotel capable of accommodating twenty-five guests. Plenty of small boats are for rent at the hotel landing. The pond is well patronized by fishermen from Bangor, who generally pass the night either at the hotel or in the cottages. About 2,500 people visited this resort in the summer of 1897.

DOBSIS LAKES.

These lakes are situated in Lakeville Plantation, Penobscot county, and in No. 5, North Division, Washington county, and are the head waters of the west branch of the St. Croix river. Six sporting camps are located in this vicinity, the Carry Farm, one mile west of the upper Dobsis and midway between the lake and Passadumkeag river, Norton & Dwelley's Camp on the upper Dobsis, Grindle & Hanscomb's Camp and the Norway House on the lower Dobsis, the Dobsis Club House on the Thoroughfare between lower Dobsis and Grand Lake, and a club house run by A. E. Gowell on Junior Lake. The two first named are reached by way of Lincoln and Lee, the others by way of Winn and Springfield. Only partial returns have been received from these camps.

The Carry Farm is run by Sidney Dwelley, will accommodate eight guests and is open from September 1 to December 1. This house is situated in a large clearing, the only clearing in the vicinity, on the top of a high ridge of land, and commands a fine view of lake and forest. Post office, Lee.

Norton & Dwelley's camp will conveniently accommodate eight guests at one time, and they are ready to entertain and guide parties at all times in the open season of fish or game. Post office, Lee.

Grindell & Hanscomb can accommodate in the neighborhood of twenty at their camp and are ready for business at all times in the open season. Post office, South Springfield.

The Norway House, M. W. Shaw, proprietor, will accommodate twenty. This house is open the year round, and last year, entertained fifty sportsmen, all from outside the State, who paid Mr. Shaw, on the average, \$20 each. Three hundred dollars were paid out for help, but butter, eggs, milk, poultry and garden truck were all produced on the place. The house is situated

on Norway Point, so named from the beautiful growth of Norway pines, on the west shore of the lake. Dry and healthy location, pleasant walks and fine scenery. Post office, Springfield.

The Dobsis Club House is not a public house, but is run by G. L. F. Ball, for the owners. It is open two weeks for spring fishing and two weeks in October for hunting. From eight to ten can be accommodated at one time. Fifteen were here entertained, last year, twelve of whom were from out of the State. Two hundred and twenty dollars were paid out for help, and \$75 for farm, garden and dairy products. Post office, South Springfield.

The camp on Junior Lake is also a club house, will accommodate in the neighborhood of twenty persons, and is open spring and fall. Post office, South Springfield.

Grand Lake—On Grand Lake, several miles below the Lower Dobsis, is situated "The Birches," a private club house owned by the Duck Lake Club, a party of Boston gentlemen, and is in charge of F. H. Ball. The club members here take an outing for the spring fishing and another for the fall hunting. This is not a boarding camp, yet parties fishing or hunting in the vicinity are sometimes entertained for a night or two.

The extensive tract of forest in which these camps are situated, the only large area of wild land near the seaboard in the State, is well stocked with large and small game. Though moose are scarce in this region, it seems to be the natural home of the deer and the bear. Deer are as plentiful here as in any part of the State, and the same is true of small game. Landlocked salmon, togue and spotted trout abound in the numerous large lakes in this vicinity, while the smaller ponds, brooks and streams afford the finest of trout fishing.

LOCAL ATTRACTIONS.

In answer to the question, "What are the particular attractions of your locality for summer visitors?" the following replies have been made by hotel and boarding house keepers.

AROOSTOOK COUNTY.

Elliot House, Orient.

Beautiful location on one of the largest and most picturesque lakes in Aroostook county, in the heart of one of the best hunting and fishing regions of the State.

Bangor and Aroostook House, Limestone.

Scenery; situated near Grand Falls, New Brunswick, and in the midst of the finest farming region in the county of Aroostook.

Eagle Hotel, Fort Kent.

Hunting, fishing and boating, delightful climate, healthful air, long lingering twilight, and delicious small fruits.

The Waverly and Bell Hotels, Wytopotlock.

Everything pertaining to lake, forest and stream, large and small game, and good fishing.

Littleton House, Littleton.

Extensive forests, lake and stream fishing and large and small game.

Ashland House, Ashland.

Fishing and hunting, finest in the world.

Exchange, Fort Fairfield.

Pure water, including one of the best mineral springs at Aroostook falls, the old historic fort in town, grand forests, beautiful scenery, good fishing in every direction, and last but not least, the handsomest women on the face of the earth.

Windsor, Fort Fairfield.

Hunting and fishing, game being abundant during the fall and early winter and fishing unsurpassed during the summer months.

Hotel Burleigh, Caribou.

Fishing and hunting are the particular attractions in this locality.

Henderson Boarding House, Allagash Plantation.

This being the upper settlement on the St. John river, it is in the midst of the great fish and game region of northern Maine, and is the connecting link between civilization and the boundless forest.

Hotel Exchange, Houlton.

Healthy climate, good hunting and fishing and pleasant drives.

J. W. Ambrose & Son, East Ridge, Sherman.

By some mistake myself and son are down in the year book as hotel men. We are farmers. It is true we live in a good sporting section, good because it is not much frequented by sportsmen. Deer are so plenty that they come into our grain and potatoes and just after sunset are frequently seen roaming over the fields. Macwahoc stream, one and one-half miles from our house, is a good fishing stream for trout. Of course we produce our own farm, garden and dairy products and could care for half a dozen sportsmen at a time if they should drop in upon us.

Hotel Exchange, Island Falls.

A good hunting and fishing region, delightful scenery with pure bracing air.

Meduxnekeag, Monticello.

Excellent fishing both in streams and in adjoining lakes.

Oakfield House, Burleigh.

This house is situated on the east branch of the Mattawamkeag river, is a quiet, homelike place, with very good hunting and fishing.

Bliss House, Island Falls.

First, tourists are taken over the Bangor & Aroostook Railroad through the heart of the greatest fish and game region in the State. Second, the climate is healthful and the air invigorating. Third, the roads are excellent and the drives unsurpassed. Fourth, the scenery is grand. Fifth, guests get plenty of well cooked, wholesome food and find a landlord, landlady and clerks ready to make them feel at home. Sixth, the charges are moderate. Seventh, there is a registered guide at the house whose knowledge of wood craft is unsurpassed.

CUMBERLAND COUNTY.

Granite Spring House, Long Island, Portland Harbor.
Boating, bathing, etc.

Jillson Farm, East Otisfield.
Good fishing and pleasant drives.

Raymond Spring House, North Raymond.

The spring equal to Poland, an elevation one thousand feet above the sea, pure, bracing air, a beautiful rolling country and scenery unsurpassed. Lakes and streams filled with trout, pickerel and black bass, good shooting and boating. Very rarely troubled with mosquitoes, house and surroundings absolutely faultless as regards neatness and good management, good beds, a first-class table and an ideal home.

Pine Grove Farm, Raymond.

Good fishing and gunning, very dry locality and a good home farm.

Peaks Island House, Peaks Island.

All the usual attractions of a seashore resort.

Oceanic House, Peaks Island.

Boating, fishing and bathing.

Lake View Farmhouse, East Otisfield.

Good fishing, boating and bathing, abundance of pond lilies, beautiful scenery, pure air, large airy rooms, plenty of home

raised vegetables, milk and cream in abundance and splendid water. A nice quiet place for invalids or children, just the place for a good rest.

Valley View House, Peaks Island.

The Valley View is situated near Trefethen's landing, surrounded by fruit and shade trees. Good fishing at the landing and a fine beach for bathing. The house is connected with a farm, and we produce our own milk and vegetables and catch our fish.

Crockett House, South Naples.

Nearness to Sebago Lake with fine salmon fishing, clear spring water.

Lake View, East Raymond.

Pure air and water and extended view of scenery. A fine view of Lake Sebago, White Mountains, and of surrounding towns. Its elevated site and usual breeze are very conducive to good health. Post office within five minutes' walk.

Hotel Naples, Naples.

Fine drives, boating, bathing, fishing, gunning, cycling, tennis and croquet courts. The house is situated near the shore at the southern end of Long lake. In its immediate vicinity are the Bay of Naples, Sebago lake, Highland lake, Peabody pond and Crystal lake, all of which offer fine sport for the fisherman. In Long lake are caught in their season, salmon, lake trout, black bass, white perch and pickerel. Naples is reached from Portland by Mountain Division of Maine Central Railroad for Sebago Lake station, thence by steamer across Lake Sebago, up the Songo river and across the Bay of Naples.

Central House, Raymond Village.

The location, fronting on Lake Sebago with Panthers pond in the rear, affords fine scenery, good fishing and boating, with pleasant drives.

Ridge House, Cousin's Island.

Good boating, fishing and bathing.

Bay View, Yarmouth.

Nearness to bay for boating and bathing.

Overlook Cottage, Bridgton.

Situated 600 feet above the sea on a high ridge of land two miles in length dotted over with fertile farms, overlooking the surrounding country which spreads out like a panorama several hundred feet below, and in full view of the White Mountain range, the beauty of the location could hardly be surpassed in all New England. Bridgton village, two miles south, lies 195 feet beneath us, Highland lake on the west, a sheet of water three miles in length and well stocked with black bass, lies 178 feet, and the ten mile stretch of Long lake on the east in which salmon of over 15 pounds weight have been caught, lies 334 feet beneath our level. The house is supplied with water from an artesian well 190 feet in depth. We run a first-class farm cottage in every particular, have no lack of guests and they gladly pay liberally for their accommodations.

Union House, Peaks Island.

Boating, fishing and bathing.

Dirigo House, Long Island.

Boating and bathing.

Harbor View House, Peaks Island.

Nice location, fine views, good bathing and rooms light and airy.

Conant House, Harding.

This is strictly a transient house and is noted for its shore suppers. In this line the business has increased 500 per cent. over last year and is a popular resort for the people of Bath and Brunswick as well as from places more remote.

The Belmont, Franklin Wharf, Portland.

A combination of seashore and country, woods and groves, quiet, good drives and within five miles of Portland. Good

rooms, good food well served and a comfortable homelike place. A strictly temperance house where guests may safely bring their families and be assured they will be away from the influence of intemperance.

Stoneleigh House, Bridgton.

Particular attractions, good fishing and fine drives.

Ocean View Homestead, Yarmouth.

Boating, bathing, fishing, pine woods, lovely drives, steam-boat connection with Portland and the islands, telephone, and excellent spring water in the house.

Innes House, Peaks Island.

All the usual seashore attractions.

The Cumberland, Bridgton.

Beautiful drives, good boating, fine fishing, etc.

The Elms, North Bridgton.

Driving, boating, fishing, and scenery unsurpassed in New England.

The Southgate, Prout's Neck.

Beauty of situation, fine beaches, with superior facilities for surf bathing. The boating, walks and drives, ocean and island views, combine to render Prout's Neck a delightful seaside resort.

HANCOCK COUNTY.

Kimball House, North East Harbor.

Good boating, sea and mountain air make it one of the most healthful resorts on the New England coast.

Hotel Islesford, Islesford.

Pure air, boating and fishing.

West End Hotel, Bar Harbor.

Bar Harbor.

Castine House, Castine.

Driving, boating and fishing are the principal attractions. Views are not equalled.

The Acadian, Castine.

Fine drives, excellent facilities for bathing, sailing, canoeing and boating, freedom from fog, historic old town, fort, old houses and cool shady streets.

Seaside Inn, Seal Harbor.

Ocean and mountain, open sea, congenial quiet summer home away from the fashionable life of the usual summer resort.

Woodbine Terrace, Brooklin.

Cool, healthy and delightful climate; proximity to the ocean, church, post office, skating rink and places of business; delightful roads for driving or for the wheel, good opportunities for boating and for shallow and deep sea fishing.

The Lookout, Brooklin.

Quiet, fine scenery, good boating and bathing, float for diving, tennis court, beautiful drives, fine roads for bicycling, open fire, long piazza, evergreen grove near by, and every room has a view of water.

Buck's Harbor Inn, South Brooksville.

Good facilities for boating, fishing and riding.

Stanley House, Manset.

Magnificent views of sea, mountains and Somes' sound, beautiful lawns, excellent facilities for boating and fishing, ocean water on each floor for bathing, sanitary arrangements perfect, double tennis court, telephone connection, etc.

Grindstone Inn, Winter Harbor.

Finest location on the coast.

Bay View House, Pretty Marsh.

Harbor fishing, boating, bathing, lovely views of bay and mountain, fresh water ponds near by.

The Wasson Homestead, West Brooksville.

Fishing, drives, ocean and mountain scenery.

McClusky Boarding House, Castine.

Fine boating and drives.

Sunset House, Stonington.

One of the prettiest views on the coast, near the water, good boating and fishing, near post office.

Ocean View, Stonington.

Large airy rooms, artesian water, pretty lawn surrounded with flowers, a fine view of ocean and islands from rooms, good piano, buckboards, row boats, picnics to the islands, good air, good wholesome food from a country market, fresh fish a specialty. Meats we do not give as an inducement to lure people from cities, but they are always served. Post office close by, telegraph and express near, free carriage to and from boat. Temperance house. We do all we can to make our guests enjoy the few days they may have to spend with us.

Sherman Boarding House, North Brooklin.

Drives, mountain and bay scenery, yachting, fishing, bathing, etc.

Hillside Cottage, Brooklin.

The fine scenery of Mount Desert hills, islands and ocean, good bathing, boating and fishing privileges, delightful drives, good roads, shady nooks, and many other attractions too numerous to mention. As to the house the rooms are large, well and newly furnished, and a fine view of the water from each room.

Christian House, Castine.

A fine park, beautiful scenery, delightful drives, boating on river and bay, easy of access by steamers, several landings being made daily.

KNOX COUNTY.

Mountain View House, Martinsville.

Grand mountain, lake, river, harbor, bay and island scenery, a great variety of most beautiful drives and walks, good stable, fine safe boats and yacht for rowing and sailing, good fresh and salt water fishing, very fine health giving water, a combination rarely found elsewhere.

Ocean House, Owl's Head.

House within four rods of high water, fine view of steamboats and sailing vessels, nice shade trees, smooth beach, good fishing and pleasant drives.

Young Boarding House, Matinicus.

Two fine beaches, pure air, even temperature, cool at night, bathing, boating and deep sea fishing.

The Hillside, Criehaven.

All the attractions of an out-to-sea resort, including boating, fishing, sketching, etc.

LINCOLN COUNTY.

Squirrel Inn, Squirrel Island.

Besides the hotel, which accommodates about 175 people, Squirrel Island has about 125 cottages, chapel, casino, reading room, telegraph and post office, fine base ball, croquet and tennis grounds, water works, with abundance of pure spring water, first-class supply store where everything the home and Boston markets can afford is for sale at reasonable prices, fine beaches and bath houses, smoothest waters on the coast for boating and sailing, and the scenery unsurpassed. Fine musical and literary talent is constantly in attendance at the casino and chapel services, and the highest class of moral and temperance society is maintained among the people and guests, all of which makes Squirrel Island a model place for a person or family to spend the summer months.

The Edgemere, Pemaquid Harbor.

Scenery, cool climate, boating, bathing and fishing both in fresh and salt water, good drives and a good house well kept.

Point of View House, Southport.

Sailing, fishing, bathing, and a good view of the surrounding islands, Squirrel, Mouse, Capitol, Burnt Island, etc.

Summit House and Cottage, South Bristol.

Situated on Rutherford's island at the extreme end of the long peninsula of South Bristol, and being connected by a stone bridge with the main land, this house offers the pleasures and benefits of insular life with convenience of access. The breezes are cool and refreshing and fogs are less prevalent than on many sections of the Maine coast. Here the amateur photographer has his "dark room," and the ubiquitous bicycle is provided for. Those who would wisely recuperate by a country sojourn will be assured of a comfortable, restful, quiet summer home, at moderate rates, in this favored spot which has been named by one of our friends, "Port of Peace."

The Anchorage, South Bristol.

Near the steamboat landing at South Bristol, this house and location possesses all the attractions of this popular summer seashore resort.

Rutherford Cottage, Christmas Cove.

Boating, bathing, fishing, driving, etc.

Devon Rocks, Southport.

Fine view of the ocean, sailing, rowing, bathing, etc.

Sea View, Squirrel Island.

Sea air, pure water and ocean view.

Homestead, Christmas Cove.

Fishing and boating.

Samoset House, Mouse Island.

Fishing, sailing, bathing, etc.

Elliot House, Christmas Cove.

Good sailing, riding, bathing, fishing, surf, and indoor amusements.

Harbor View, Round Pond.

Boating and fishing.

NeKranan House, Boothbay Harbor.

A pleasant situation on the Isle of Springs in Sheepscot bay, on the west side of the town of Boothbay Harbor. Pure spring water, sea air, safe boating and sailing and good fishing. The hotel stands on an elevation of ninety feet above the water level, affording a fine outlook of bay and islands, and exemption from mosquitoes. More than twenty cottages have recently been built in the vicinity.

OXFORD COUNTY.

Lake View, Center Lovell.

Beautiful lake and mountain scenery, good fishing and boating.

Palmer House, Center Lovell.

Mountain scenery, trout fishing near the house, bass fishing in a nearby pond, hunting, etc.

Spring Cottage, Brownfield.

Fishing, hunting, riding, mountain scenery, and a good table.

Pequawket House, Brownfield.

Fishing, hunting, and fine scenery including mountain views.

Andrews House, South Paris.

Healthfulness.

Mountain View, Brownfield.

Fishing, driving, mountain air and scenery.

Maple Lane Farm, West Bethel.

Plenty of good farmer's food, all kinds of berries raised in the garden, also early vegetables. Location is dry and airy. Maple Lane is a shady avenue of trees one-half mile in length leading to the Androscoggin river, and on the banks of the river is a beautiful grove of pines. Grand view of the mountains, only a day's drive to Mount Washington and return, fine drives in the vicinity of the farm, picnic excursions for which it is said that "The Deacon can cook one of the best of dinners." Dame Nature favors Bethel with varied scenes and haunts of beauty. Plenty of trout in the early season and game later in autumn.

PENOBSCOT COUNTY.

Katahdin House, Winn.

Fishing, hunting, fine drives and beautiful scenery on the Penobscot river and the lakes. House supplied with pure spring water, and good livery connected with the house.

Patten House, Patten.

Patten is at the terminus of the Patten branch of the B. & A. Railroad, and is the starting point for hunting and fishing parties into the great fish and game region of this section of northern Maine.

PISCATAQUIS COUNTY.

Mount Kineo House, Kineo.

The attractions are, bicycling, lawn-tennis, base ball, trout fishing, drives, mountain climbing, walks, canoe and steamboat excursions.

Moosehead Inn, Greenville Junction.

Hunting, fishing, lakes, ponds, beautiful scenery, country drives, pure air, spring water, etc.

Lily Bay House, Lily Bay.

Fishing and hunting.

Lake Hotel, Willimantic.

Fine fishing, land-locked salmon, pickerel, perch and black bass. The best salmon fishing is through the months of June and July. The best day's catch this year, was on June 24th, when 146 salmon, weighing from two to seven and one-half pounds each were taken in Sebec lake, within two miles of the hotel. The house is situated on a point of land overlooking the lake and commands a fine view of wood, lake and mountain scenery. Several small steamers make daily landings at the hotel wharf. Both large and small game are plenty in the vicinity.

Silver Lake Hotel, Katahdin Iron Works.

Hunting and fishing.

Deer Island House, Capens.

Boating and fishing.

Ebeeme Farm House and Cottage, Brownville.

Near Ebeeme pond, where both large and small game are very abundant. Trout, perch, black bass and pickerel are plenty in the ponds and streams near by, and good roads lead to the pond. The location is five miles from the C. P. Railway, seven from the B. & A., six from Katahdin Iron Works, and four from Ebeeme mountain. Good garden, and milk and eggs are produced on the place. No lack of boats and canoes.

Grant Farm House, Roach River.

Trout fishing in spring and summer and large and small game in the fall. Deer are very abundant. As many as twenty-five at one time are often seen in the field. The farm is 1,100 feet above sea level and is situated ten miles northeast from Roach river at the foot of Ragged lake.

Hotel Richardson, Sebec.

Sebec lake, beautiful drives commanding mountain scenery, spring fishing and fall hunting.

Woodside Cottage, Greenville.

The quiet, the scenery, the ponds, the lakes, the mountains, the moose, deer and caribou, and the small game.

Lake View House, Lake View.

Situated at the south end of Schoodic lake on the C. P. Railway, this house is easy of access, lake, mountain and forest scenery unsurpassed, hunting and fishing in their season as good as the best.

Shaw Farm House, Second Roach Pond.

A commodious house in the very heart of the big game region. Moose, caribou and deer are abundant, six accessible trout ponds, beautiful scenery. Twelve miles from Lily bay on Moosehead lake, and six from Roach river, the nearest house and post office.

SAGADAHOC COUNTY.

Birchwood Inn, Bath.

Boating, bathing, fishing, charming drives and excellent bicycle roads.

SOMERSET COUNTY.

Hotel Newton, Jackman.

Fishing, hunting, high elevation, dry air, beautiful scenery, good spring water, steam heat, with hot and cold water.

Armstrong House, Jackman.

Good fishing and hunting.

The Quinnebasset Inn, Norridgewock.

This is mainly a health resort. Fine location, beautiful drives, fine scenery, historic old town, balmy air, best of spring water, hot water heat, baths of all kinds, and sanitary arrangements perfect in every detail.

WALDO COUNTY.

Islesboro Inn, Dark Harbor.

An excellent golf course, warm sea bathing in a harbor specially diked in, sailing, rowing, driving and tennis.

Curtis Homestead, Searsport.

The combined advantages of country and seashore, fine roads for driving with the beautiful Penobscot bay ever in sight, as well as many charming inland drives. The town is noted for its wealth, fine residences, well kept lawns, and beautiful shade trees.

Maplewood House, Prospect.

Good fishing, beautiful carriage drives, and some of the finest scenery in the State, Prospect being so named on account of its beautiful scenery.

WASHINGTON COUNTY.

The Hillside, Lubec.

Boating, fishing and driving.

American House, Lubec.

Fishing, boating, hunting and driving.

The Sunshine, Lubec.

Delightful scenery, boating, and excellent roads for wheeling or driving.

Wadsworth House, Eastport.

Boating, fishing, riding, base ball, and beautiful island scenery.

Lake View House, Grand Lake Stream.

Fine fishing, beautiful lakes and streams, boating and canoeing, deer hunting and bird shooting as good as anywhere in the State, good guides, good camps, in short, one of the finest back woods resorts in Maine.

Grand Lake House, Grand Lake Stream.

Game, salmon fishing, boating and canoeing.

Nemattano, North Lubec.

Advantages of seashore and country.

Harbor View, Machiasport.

Boating, fishing, and pleasant drives. A fine view from the house which stands on a hill overlooking the harbor.

Baskahegan Hotel, Brookton.

Deer in great abundance, while the moose, caribou and bear are often seen in this vicinity, as well as plenty of small game. Good fishing in the lakes, to which parties are taken by team. Good reliable guides always in attendance. Trout and togue are our leading fish.

Shackford's Head Hotel, Eastport.

Good fishing, boating, bathing, magnificent scenery, finest climate on the continent, one of the safest harbors on the Atlantic coast, and the most delightful drives in the country.

YORK COUNTY.

Marshall House, York.

The house is situated at the mouth of York harbor on an elevated point of land commanding an ocean and inland scenery unsurpassed on the Atlantic seaboard. The "short sands," a firm, hard beach, lies immediately in front of the house, so sheltered by projecting points that the heavy sea swells never interfere with bathing or boating, and open sea view from Kittery harbor on the south to Cape Porpoise on the northeast, and the inland scenery is delightful.

Lawrence Cottage, Old Orchard.

The magnificent beach, and continuous out door religious and temperance camp meetings.

Wentworth's, Kennebunk Beach.

Buckboard rides, bathing, tennis, base ball, etc.

The Champernowne, Kittery Point.

Good boating, bathing and fishing.

Yorkshire Inn, York.

Boating, bathing, fine drives, and pure air, it being one of the highest points at the harbor.

Granite State House, Kennebunk Beach.

Directly on the seashore, yet but a short distance from cool shady groves, in fact, sea and country combined. Fishing, sailing, bathing, tennis, base ball and cycling.

Eagle Rock, Kennebunk Beach.

Boating, bathing, fishing, driving, high land, pure spring water and healthy location, with a perfect system of drainage.

Bay View House, Bay View.

Bathing, fishing, fine views, pure spring water, good drainage, surrounded by a grove of pines and by a large and well kept lawn with lovely walks and drives and cultivated with wild flowers in profusion.

Garrison House, York Village.

Bathing, boating, fishing and drives.

Alfred House, Alfred.

Alfred is an ideal country village, the county seat of York county, and abounds in fine drives, good fishing, hunting, etc.

Gorham House, Old Orchard.

Nothing but beach.

Malvern House, Old Orchard.

Perfect system of sewerage, beautiful shade trees, grassy lawn, fine views of ocean and pines, very quiet and restful. Hot and cold water, bath room, well furnished table and moderate terms.

Lynn Cottage, Old Orchard.

A fine grove near by, good rooms and table, and home comforts.

Ocean Rock Cottage, Old Orchard.

Googins rocks which are very popular, being the only rocks along the beach, bathing, fishing, and duck hunting in September.

Hillside Farm, Wells Beach.

A fine sea view, boating, fishing and fine drives.

Sea Cottage, York Village.

Beach and varied scenery.

Bay View, Webhannet.

Fine beaches for bathing, walking and riding, good fishing, grand scenery, one of the loveliest spots on the coast. The Bay View makes a speciality of fish in variety in its cuisine.

Hotel Elmwood, Wells.

High ground, fine ocean view, handsome shade trees, lawn swings, sea fishing, boating, bathing, driving, etc. Fresh vegetables, butter and eggs produced on the farm run in connection with the house.

Passaconaway Inn, York Cliffs.

Always cool, beautiful scenery, drives, sailing, fishing, etc.

Marlborough, Old Orchard.

Old Orchard, too well known to need description.

Hotel Fiske, Old Orchard.

Beach, bathing, etc.

Lake Bauneg-Beg House, North Berwick.

The lake and its groves and the wild beautiful scenery combined with fishing and hunting.

Western House, Old Orchard.

The beauties and attractions of Old Orchard are many, among which is the finest bathing beach in the world, it being some nine miles long and about 500 feet wide at low tide. There are numerous pleasant drives, good boating, excellent fishing both in and off shore, deep sea fishing, one of the best race tracks in this section of the country, and a good prospect of a pier being built in the near future.

Weeman's, Parsonfield.

A good farm home, the best of spring water, beautiful and diversified scenery.

The Pocahontas, Gerrish Island, Kittery Point.

Ocean, Portsmouth harbor and surroundings, many points of historical interest, fine boating, bathing and fishing. A great variety of shore front, fine driving and walks, primeval forests and greatly varied contour of the vicinity, as well as the opportunity for the usual summer sports like tennis, base ball, golf, etc.

ABSTRACT FROM THE REPORT OF THE FISH AND GAME COMMISSIONERS.

From the annual report of the Commissioners of Inland Fish and Game, we derive the following interesting facts:

Never before in the history of the State have inland fish and game interests been so much discussed by the people and the press as during the year just closed. The laws for the protection of fish and game have always been difficult of enforcement and those charged with their enforcement have never escaped severe criticism.

It is a fact, however, that there has been less violation of the game laws this year than ever before since fish and game became abundant.

The State has four well equipped hatcheries and feeding stations, viz., at Edes Falls, Caribou, Auburn and Monmouth.

At Auburn a cottage has been built during the year for a residence for the superintendent and a hatching house erected at Caribou, and new dams have been built at these places.

Two hundred and thirty-five thousand trout were raised; four hundred and fifty thousand land-locked salmon; and one hundred and forty-six thousand Penobscot river salmon, which were planted in one hundred and twenty-one different bodies of water in the State, besides several hundred thousand trout and salmon were raised and planted by private enterprise, the State having furnished the eggs for hatching.

The catch of fish, land-locked salmon, white perch, pickerel and black bass has been exceptionally large. The guides report that those fishermen whom they have guided have caught more than fifty tons of trout and salmon. The outlook for future fishing was never so good in recent years as to-day.

The law for the registration of guides has worked well, and is held in great favor by the commissioners and a large majority

of the guides and true sportsmen: 1,316 guides have been registered since the law went into effect, July 1st.

From the annual report of the guides the following facts appear:

Total number of days guides have been employed, 51,918.

At \$3.00 per day, the usual price, would amount to \$155,754.00 paid in wages to the guides; \$50,000.00 has been paid to the taxidermists of the State.

Number of residents guided.....	3,384
Number of non-residents guided.....	7,125
Total number of moose killed.....	250
Total number of caribou killed.....	239
Total number of deer killed.....	8,947
Total number of bear killed.....	160

Non-residents who have employed guides have spent in the State at least \$2,000,000.

Residents of the State who employed guides expended at least \$175,000.

This is a matter for congratulation that more than 3,000 of our own citizens have preferred to spend their vacation and money in the State instead of other states or countries.

The guides report their other occupation besides guiding as follows:

Three hundred farmers, 35 woodsmen, 1 express agent, 1 engineer, 3 game wardens, 18 hunters, 1 harness maker, 1 hostler, 3 hotel proprietors, 7 jack-at-all-trades, 2 jewelers, 74 lumberers, 9 merchants, 16 millmen, 2 mechanical engineers, 1 pension attorney, 4 painters, 1 professional loafer, 1 postal clerk, 42 river drivers, 2 reporters, 10 surveyors, 8 spool makers, 2 students, 5 gum pickers, 8 steamboat proprietors, 10 taxidermists, 9 teamsters, 27 trappers, 1 trial justice, 1 farmer and postmaster, 1 bush whacker, 1 bottoming chairs, 7 blacksmiths, 8 merchants.

One thousand nineteen, (1,019) were born in this State. Three have died—two by drowning.

The youngest is fourteen years of age and the oldest seventy-eight, who has been a guide for more than half a century.

They are registered from fourteen of the sixteen counties as follows:

Two Androscoggin, 173 Aroostook, 10 Cumberland, 175 Franklin, 11 Hancock, 18 Kennebec, 1 Knox, 52 Oxford, 340 Penobscot, 270 Piscataquis, 136 Somerset, 5 Waldo, 108 Washington, 2 York, 13 Lake Megantic Association guides.

In the several fatal shootings of persons while hunting no registered guide has been connected. Five have been caught poaching, and one surrendered his certificate.

The commissioners have held monthly meetings at the State House and have attended forty-one hearings on petitions of taxpayers to close certain lakes, ponds and streams.

From the foregoing abstract it will be seen that Maine has a marvelous industry in her inland fish and game which should be well cared for.

RANGELEY AND DEAD RIVER REGION.

The Rangeley Lakes and Dead River region has long been known as the Switzerland of Maine.

This region is located on the northwestern boundary of Maine, in Oxford, Franklin and Somerset counties, covering an area of 2,000 square miles.

Here one finds variable and ever beautiful scenery, thrifty villages, cultivated farms, wilderness where the mountains, lakes and rivers add to the charm, and where fish and game abound. The high altitude of the lakes, over 1,800 feet above the sea level, makes this one of the greatest resorts for sufferers from hay fever, some of the worst cases on record having found this region a perfect cure.

Not many years ago there were no hotels. What now?

The railroad has been extended into the very heart of the wilderness, large hotels and camps have been built, many elegant summer home camps and cottages have been erected by worthy and distinguished people. Last season more than 10,000 people from all over this and foreign countries visited this section, which is reached via Maine Central Railroad to Farmington, from there by the "Baby Railroads," two-foot gauge, the Sandy River and the Phillips & Rangeley Railroads, whereby, leaving Boston in the morning, one takes supper on the shore of the lake, a ten hours' ride, the only all-rail route.

The chain of Rangeley lakes, six in number, are all connected by narrows or streams forming one continuous water communication of fifty miles. They are the Rangeley or Oquoosoc, Cupsuptic, Mooselookmeguntic or Big Lake, Molechunkamunk, Welokennebacook and Umbagog.

It is from these waters the largest speckled or brook trout ever caught in the world have been taken, and it is here the best known anglers spend weeks and months, leaving many thousands of dollars each season.

The thriving village of Rangeley, located at the head of Rangeley lake, is the terminus of the Phillips & Rangeley Railroad, and the central place for those going in all directions. Here is the Rangeley Lake House, which in 1896, was moved to the shore of the lake, enlarged and improved. J. B. Marble is the proprietor, and there is no hotel superior in Maine.

The shores of this lake have been cleared and fine farms are located here, and beautiful camps and cottages have been built. Among the number are the following: Max Hendrick, the celebrated Boston singer, Gen. Sawtell of Washington, D. C., Hon. Adon Smith of New York City, Mr. Daniel L. Bonney, Hon. N. U. Hinkley of Farmington, Hon. F. E. Timberlake and N. P. Noble of Phillips, A. B. Gilman of Haverhill, Mass., R. A. Tuttle of Boston, Dr. Charles Carrington of Connecticut, while on an island in the lake, "Maneskootuk," F. S. Dickson, Esq., a Philadelphia lawyer, has built one of the most beautiful and unique summer homes. On the other lakes are camps and cottages besides the public hotels and camps. Senator William P. Frye, who has a cabin on the narrows between Cupsuptic and Big Lake, still holds the honor of having taken the largest trout on a fly, which weighed over ten pounds. Others larger have been caught, but not in this manner. Mr. E. Haskell, editor of Boston Journal, owns a camp on the Big Lake, also A. A. Sargent of Haverhill, Mass.

The Mooselookmeguntic House, in 1897, was purchased by Washington parties and is now in charge of one of the best known landlords in America, Theodore L. Page, who also has charge of the Senate Cafe in Washington, D. C. In summer he entertains some of the most distinguished guests.

There are no log cabins for the entertainment of guests equal to those found in this part of Maine, Camps Bemis, The Birches, Pleasant Island Camps, etc.

On the lower lakes, J. Parker Whitney, a California millionaire, Dr. Haven, and Mr. John Thayer of Massachusetts have beautiful summer homes.

It is estimated that more than \$500,000 worth of property, including several elegant private steamers, is owned on these lakes by people from outside of Maine.

Contiguous to the Rangeley lakes and emptying into them, are Kennebago and Parmachenne, both possessing the same general characteristics as the large lakes.

Kennebago lake is ten miles from Rangeley, by buckboard, and is thought by many to be one of the most picturesque lakes in Maine. Half way from Rangeley is Loon Lake Camps, with eleven small lakes near by.

This is the way Seven Ponds Camps are reached, which are far away in the wilderness and where fish and game abound.

The Dead River region is reached by the same route, branching off at Strong, going via Kingfield to Carrabasset, or stopping at Dead River station, four miles from Rangeley, then by stage on a fine road, past Green's Farm, to Eustis. Here Mt. Abram, Mt. Saddleback and historic Bigelow, rise above the smaller ranges.

Eustis, a small village, is the central starting place for all the camps in this region.

There are no hotels at any of the ponds or camps, but many attractive log cabins, where from all over the land, people of distinction come to spend vacation days and enjoy the wonderful fishing and hunting.

Tim Pond is famous for fly fishing, where, although not large, hundreds of gamy trout rise to the fly every day.

King & Bartlett, Deer Pond Camps, Blakesly Camp, Round Mountain Lake, etc., are all reached from Eustis.

At Flagstaff there are two hotels, and near by are Spring Lake Camps. The Carrabasset House is at Carrabasset, the terminus of that railroad branch, and five miles from there is the Ledge House.

This is truly a wonderful and beautiful land, visited by thousands annually, and there is room for as many more, with no fear of exhausting the fish or crowding the wilderness.

HOTELS AND CAMPS.

The following list of hotels and camps has been furnished, from the Rangeley and Dead River regions, giving post office, name of proprietor or landlord, name of house or camp, location and capacity for guests:

Rangeley Post Office.

John B. Marble, Rangeley Lake House, Rangeley, 250.

Eben Hinkley, Hinkley's, Rangeley, 40.

C. E. Belcher, Belcher's Cottages, Rangeley, 25.

Herrick & Soule, Gull Pond Camp, Rangeley, 10.

Kimball & Bowley, Mountain View House, Mountain View,
100.

R. S. York, York's Camps, Loon Lake, 40.

Arthur L. Oakes, Dead River Pond Camps, Dead River
Pond, 12; Camp Among the Clouds, Bedroom Pond, 18.

Haines' Landing Post Office.

T. L. Page, Mooselookmeguntic House, Haines' Land-
ing, 75.

E. B. Wharff, Bald Mountain Camps, Haines' Landing, 40.

Billy Soule, Pleasant Island Camp, Pleasant Island, 50.

Indian Rock Post Office.

C. T. Richardson, superintendent Oquassoc Angling Associa-
tion, Indian Rock, 40.

Beaver Pond.

Ed Grant, Seven Ponds Camps, 25.

Bemis Post Office.

C. F. Barker, The Birches, Birches, 100; Bemis' Camps,
Bemis, 100.

Upper Dam.

John Chadwick, Upper Dam House, 50.

Middle Dam.

F. E. Coburn, Anglers' Retreat, 50.

Kennebago Post Office.

Richardson Bros., Kennebago Lake House, Kennebago

Coplin Post Office.

Isaac W. Greene, Greene's Farm, 25.

Eustis Post Office.

- E. B. Lambert, Shaw House, Eustis, 50.
S. Quint, Coburn House, Eustis, 40.
H. M. Pierce, King & Bartlett Camps, King & Bartlett, 50.
Edgar Smith & Co., Round Mountain Lake Camp, Round Mountain Lake, 50.
Julian K. Viles, Tim Pond Camp, Tim Pond, 40.
Megantic Club, Chain of Ponds Camp, Chain of Ponds, 50.
W. S. Emery, Blakesley Camps, Blakesley Lake, 20.
W. W. Douglass, Deer Pond Camps, Deer Pond, 20.
Wm. Lockyer, Jim Pond Camps, Jim Pond, 8; T Pond Camps, T Pond, 6.

Kingfield Post Office.

- J. W. Jordan, Kingfield House, Kingfield, 50.

Dead River Post Office.

- Harlow Bros., Ledge House, 20; Carrabasset House, 25.
S. A. Parsons, Mt. Bigelow House, 25.

Flagstaff Post Office.

- W. Wing & Son, Wing's Hotel and Camps, 30.
B. E. Hammond, Lake House, 20.
A. B. Douglass, Spring Lake Camps, Spring Lake, 35.

Stratton Post Office.

- Durrell Bros., Hotel Blanchard, 20.

Phillips Post Office.

- L. A. Matthews, Phillips Hotel, 50.
Will E. Millett, Comfort Cottage, 25.

Strong Post Office.

- E. H. Porter, Porter House, 25.

MAINE'S ADVANTAGES AS A SUMMER RESORT.

The beginning, onward march and future possibilities of Maine's resort business, opens a limitless field to the thought and imagination. And really there is no more interesting paper in the history of the "Down East" commonwealth than that which records the wonderful development of this great natural resource. It is not necessary to go back into the very remote past, for it is within the memory of the present generation that this important business has come into prominence. But great as has been the progress made in recent years, it is as nothing compared to the phenomenal advancement destined to be witnessed in the years to come.

Maine has within her borders all the elements that go to make up an ideal resort paradise. Nature has been lavish with her gifts, there being a rare combination of mountain and lake, forest and shore, babbling brooks and rushing rivers, and the majestic ocean, while the wealth of scenery is materially enhanced in attractiveness by the superb summer climate, the cooling breezes from the sea being replaced in the interior by the invigorating and balsam-scented zephyrs of the forest. Nowhere else can like attractions, and in such boundless measure, be found, and now that the multitude in the larger cities of other and less favored sections know in part of this summer paradise, which is close at hand and easily accessible, they come in ever increasing numbers.

As the expansion of Maine's resort business is studied, many changes are observable. In the early years, when the tide of tourist travel first set toward the shores and woods of Maine, a few favored localities monopolized attention, and while prosperity reigned in those summer cities, the number of these resort communities was very limited. In recent times a wonderful transformation has, however, been wrought, and to-day, the summer travel has spread out over the entire State, all along

the shore from the waters of the Piscataqua to Passamaquoddy bay, reaching back into the interior and making its influence felt in every city, town and village, and extending even to the remotest depths of the forest northland. And while in the earlier years the tourists stopped almost wholly in hotels or boarding houses, thousands of them now have cottages of their own, some of these palatial in proportions, and the season has been lengthened out until it reaches from the spring months to late autumn. But while the resort business has expanded, and the summer communities have multiplied until they now number legion, yet the older resorts are none the less attractive and still flourish with all their early vigor. By way of illustration, Old Orchard, whose famous beach early brought that locality into prominence as one of Maine's pioneer resorts, never had brighter prospects than to-day. On the site of the historic Gorham House, a three-story hotel is to be built. H. E. Hildreth of Boston, contemplates converting his restaurant into a four-story hotel. Parties from Hartford, Ct., have purchased a site on Staples street, and expect to build at once a three-story hotel. Old Orchard's ocean pier is expected also to materialize before the opening of the season of 1898. And Bar Harbor, the incomparable, where the mountains and the sea unite to form the grandest scenery along the Atlantic seaboard, continues to expand and prosper, with many new buildings projected, and its future outlook full of promise. The Rangeleys, for long years prominent in the public eye, now has a broad gauge railroad, extended to Bemis the past season, and hotel enlargements and new camps are being projected in that region, with high expectations for the new year. Moosehead lake, Maine's great inland sea, has for long years been a favorite resort, but its popularity never wanes, and Kineo, in 1897, enjoyed the best season in its history, while the future outlook is rich with promise. Poland Spring, that gem among inland resorts, is without a peer, easily ranking first among American resorts, and important improvements are each year inaugurated, prominent among recent ones having been the State of Maine World's Fair building.

Among the unique features of summer life at the Maine resorts are the fetes or carnivals, and during the season of 1897,

these gala occasions eclipsed those of any previous year. The York Beach illumination was especially memorable, because on that day the first electric car reached there from Portsmouth over the Portsmouth, Kittery and York Beach Railroad, and the hotel decorations were on a grand scale. The annual illumination and river carnival at Kennebunkport, proved a great success and was witnessed by upwards of five thousand people. The annual carnival at Old Orchard had for a distinguishing feature a coaching parade, with Congressman John F. Fitzgerald of Boston, as chief marshal, assisted by a staff composed of twenty members of the Redberry Club, and during the evening there was a brilliant display of fireworks, followed by hops at the leading hotels. At Peak's and other islands in Portland's picturesque harbor, there were, during the waning days of summer, carnivals and illuminations, the same being witnessed by thousands of enthusiastic spectators. The fete day at Squirrel Island was an interesting occasion, the programme including base ball in the forenoon, races in the afternoon and a ball in the evening. Islesboro, in Penobscot bay, had, as usual, an illumination on a successful scale. Bar Harbor had a gala summer, with numerous celebrations, including yacht club illuminations, golf tournament and canoe races.

During the summer months, national associations frequently hold their sessions within our borders, drawn hither by the unequalled attractions here offered, and among those visiting Maine in 1897, was the American Institute of Mechanical Engineers, the occasion not only being the annual meeting of the institute, but also the celebration of the semi-centennial of the invention of the electric motor car. The convention was held during the last week of July, at Greenacre-on-the-Piscataqua, in the town of Eliot, in York county. The date of the opening of the meeting was especially appropriate as it was on July 26, 1847, that Moses G. Farmer, whose name and fame have spread throughout the world as that of a successful pioneer, exhibited his electrical motor car, which was propelled by battery power, in the township of Dover, N. H. Moreover, Greenacre, where the celebration was held, is a monument to the fame and memory of the inventor, who, as a student and teacher, was interested deeply in all social movements and conditions, and his

efforts, supplemented by those of his wife, were constantly put forth in the direction of lessening the evils and improving the advantage of society. Hence, carrying out a long cherished idea of her parents, Miss S. J. Farmer, four years ago, founded "Greenacre," where the men and women famous in the field of literature, science, art and religion, from all parts, come together for mutual exchange of ideas and instruction. Greenacre was the home of Moses G. Farmer, and here his body was buried almost within sight of the place where the meetings were held in memory of his achievements.

The New Hampshire State Board of Trade visited Maine on its mid-summer outing, arriving in Portland, July 21st, and being escorted by a committee of the Portland board to the Falmouth Hotel, where they made their headquarters. Among the sights taken in were the Eastern and Western Promenades, and also that superb suburban retreat, Riverton, which, through the efforts of the Portland Railroad Company has been converted into one of the finest resorts in all New England. The following day, as guests of the Portland Board of Trade, the visitors were given a sail down Portland's picturesque harbor, on the staunch steamer Pilgrim, the queen of the Casco Bay Steamboat Company's fleet. A sumptuous banquet was served the party at the Peak's Island House, the same being complimentary to the New Hampshire State Board of Trade by the Portland Board of Trade. Colonel Frederick E. Boothby, president of the Portland board, officiated felicitously as toastmaster. General Charles H. Bartlett, New Hampshire's silver-tongued orator, responded on behalf of the visitors, and below is a brief extract from his magnificent address:

"Before our farewells are spoken, before we turn our faces homeward, I feel that we should say a word to express our appreciation of your kind and generous hospitality. I am sure some word should be spoken of the warm, generous and hearty welcome we have received at the hands of the Portland Board of Trade. We did not come because we did not have any other place to which we could go, but because we knew that the city of Portland was a good place to go and to have a good time. Portland has much to be proud of that neither artists nor skilled designers could give her, but all of her scenery is as bestowed

upon her by Nature's hand. Before man had bowed in adoration at the feet of the great Creator, His finger had printed upon this city and its environments every possibility of success. You are situated geographically as well as a city can ask to be located, and so long as the white-winged messengers of commerce shall ply between the ports of the world, just so long will this proud seaport maintain her position as a leader in commercial centres. There is wealth in the cold, blue sky. There is wealth in the co-mingling of field and forest. In fact the grandeur of Maine and New England is not equalled by any locality in the country."

But it is Penobscot bay and the eastern shore to the boundary line the writer has been especially delegated to depict. It was a typical August day, when, in company with Henry E. Capen, president of the Maine Hotel Proprietors' Association, I ascended Mount Battie, by the carriage road recently built. Camden has always been famous for its drives, but the past summer, a new highway has been opened that eclipses all the others in picturesqueness. Mount Battie, although not as high as Mount Megunticook, rises precipitously in the vicinity of 1,000 feet, and the busy village of Camden nestles at its base. Columbus Buswell, a Camden business man, has recently built a road up the west slope, and the highway being substantially constructed, one can readily ride to the summit. On the mountain top, Mr. Buswell has built a commodious hotel, the Summit House, and also an observatory fifty feet high. One day, during the summer of 1897, a party of eighteen of Camden's colony of summer tourists drove to the summit and passed the night at this hotel. Since the close of the season Landlord Buswell has decided upon further improvements and before the opening of the summer of 1898, the hotel will have been enlarged by twelve additional rooms, and the observatory will rise to an additional height of twenty feet. From this observatory the view in a clear day is grand beyond description, and it seems as if the greater part of the North American continent is spread out at your feet. In no way can so graphic a conception be gained of Penobscot bay as from Mount Battie observatory, the whole bay with its myriad islands being unfolded in a great panorama, the view of which is never tiresome. Directly east is Long Island, with its

resorts of Dark Harbor, Islesboro and Hughes' Point. Further east is Deer Isle with Eggemoggin Reach beyond. To the south is Rockland harbor, and to the southeast the Fox Islands, Isle-au-Haut, and myriad other islands. Northward are Northport and Belfast, and in the distance is Fort Point, at the head of the bay, while to the northeast are Castine and Dice's Head, on the eastern shore. Penobscot bay is a magnificent body of water, the largest bay in Maine and unequalled by any in New England. Along the shores are busy cities and picturesque villages, all of them possessing attractions for the summer tourists, while the islands innumerable, that rise, some of them to considerable elevation, among the waters of this expansive bay, are many of them the favorite abode of pleasure seekers and summer rusticators.

Mount Desert Island, with its towering mountains and its placid lakes, its bold headlands and its rocky shores, its hotels innumerable and its cottages palatial, loses none of its charms for the summer tourist as the years roll by, but has rather a more numerous and devoted following, each summer making fresh conquests. Wonderful is the development wrought in recent years on this island gem, and the advent of wealth and fashion has led to expenditures well nigh beyond conception in the line of improvements. Especially noticeable is the growth of cottage life, and not only in Bar Harbor, but at North East Harbor and in other parts of the island, cottages elaborate in design and elegant in interior decorations, are being reared. It would indeed be interesting could an approximate estimate be made as to how many millions have been expended by summer tourists in the past two decades of years on this famous island. The most notable event in Bar Harbor's summer life during the season of 1897, was the advent of the New York Yacht Club, and next to that was the visit of the White Squadron, the electrical illumination by the noble vessels of Uncle Sam's fleet being highly interesting and picturesque. Bar Harbor has been the scene of many an interesting spectacle and yet in all the history of this famous resort city there has never been a celebration so uniquely attractive as the illumination, Tuesday, August 10, 1897, in commemoration of the visit of the New York Yacht Club. The double century yacht race of the New York Yacht

Club from Vineyard Haven to Mount Desert, for \$5,000 worth of cups offered by Commodore Morgan, was finished Sunday afternoon, off Baker's Island Light under the towering mountains of the famous Maine resort, with sloop Vigilant leading the fleet of twenty sail by many miles, after a run marked throughout by smooth seas and favoring winds. The Vigilant won the cup in the sloop class, leading Navahoe at the finish fifty minutes. The race in the schooner class was much closer, and Colonia, although finishing ten minutes ahead of Emerald, won the \$2,000 cup by only twenty-one seconds. The race was a tremendous success, and was not only extremely gratifying to its energetic originator, Pierpont Morgan, but will go down in history as one of the greatest of the long-distance races of American yachting. The great yachts of America's oldest club, accomplished what has heretofore never been attempted, of sailing all night without taking in a single stitch of canvas, or shortening a spar. It must be said that such a feat was due in a great measure to the surpassing weather, and probably never could be repeated. The entire 178 miles from Pollock Rip lightship was sailed without a sheet or halyard being pulled. Tuesday evening was the time determined upon for the illumination at Bar Harbor in commemoration of the visiting of America's most famous yacht club and thither thousands swarmed from Bangor and all over eastern Maine, to witness the interesting event. The picturesque island resort was in gala attire, and in the harbor there were at anchor the largest fleet of yachts ever assembled there. The illumination and pyrotechnic display was grand beyond description, surpassing anything of the kind ever before seen on the Maine coast. The illumination of the entire fleet was one of the most attractive features of the display, and from the deck of the Maine Central ferry steamer Sappho, anchored outside of Bar Island in the midst of the fleet, the grand exhibition was seen to admirable advantage. The festivities closed with a superb ball at the Kebo Valley Clubhouse. It is to be hoped in future the New York Yacht Club will visit Bar Harbor annually.

Bar Harbor's outlook is full of promise, and that her citizens believe in a bright future for this famous resort city, is indicated by the numerous building operations already projected. No

less than four or five business blocks are expected to be built on Main street before another season, and among these is the fine structure of three stories being built by George H. Grant, of the New England Telephone Company.

Many improvements have of late been made among the various resorts along the attractive shores of picturesque Frenchman's bay. The "Bluffs," the large hotel at Mount Desert Ferry, after being closed several seasons, was opened in 1897, and did a satisfactory business. Famous Sorrento enjoyed a prosperous season, and likewise Grindstone Inn, on Grindstone Neck. John G. Moore, the New York millionaire, who was prominent in the development of Grindstone Neck, is now making extensive improvements at Schoodic Point, Gouldsboro, and is building an ocean driveway ten or twelve miles long.

The Washington county coast, in picturesqueness and general attractiveness, is unsurpassed by any other portion of Maine, but because of its remoteness and inaccessibility has come into prominence but slowly. Now, however, all this is to be changed, and the announcement that work has vigorously commenced on the Washington County Railroad, the same to be in operation in 1898, means that a rich and promising territory is to be brought within the reach of the summer tourist. From Steuben on the west to Eastport and Calais on the east, the coast abounds in bold headlands, rugged shores, sandy beaches and diversified scenery. Petit Manan with its deer park, clubhouse and projected cottages, will once more step to the front. Narraguagus Bay, Ripley's Neck, Moose-a-bec Reach, the Point of Main and Machias Bay, all have attractions sure to charm the summer tourist. Further east is Cross Island, which was visited the past summer by a party of capitalists from out of the State who talk of converting the island into a deer park, and erecting a clubhouse. Nearby is Cutler harbor, where is a fine summer hotel, and further east is Quoddy Head, while across the waters of Cobscook bay is Eastport. On Shackford's Head, a suburb of Eastport, a big resort hotel has for some time been in contemplation and it is now announced that the same will be completed in season for the accommodation of guests during the summer of 1898. Passamaquoddy bay is a superb sheet of water and the famous resort of Campobello is in its midst. A sail over its

waters and up the picturesque St. Croix to the thriving city of Calais, is one long to be remembered with pleasure.

Bangor, at the head of navigation on the Penobscot, lies midway between Bar Harbor and Moosehead lake, and is a favorite stopping place for the summer tourists. In the vicinity are many attractive drives and the lakes nearby afford excellent fishing. At Holbrook's pond, Phillips lake and Green lake, on the Mount Desert branch of the Maine Central Railroad, many Bangor citizens have reared commodious cottages. The Niben Club, a social organization composed of Bangor's representative citizens, at the head of which is Colonel Isaiah K. Stetson, have converted the road bed of the historic Veazie Railroad into a superb bicycle path and have just completed on the shores of Pushaw lake, the finest clubhouse of any country club in Maine. Bangor is the starting point for the sportsmen bound to the great game regions of the north and east, and during the months of October, November and December, in the year 1897, the Bangor & Aroostook Railroad shipped from the stations along its line 2,940 deer, 139 moose and 76 caribou.

Many notable improvements are in contemplation among Maine resorts during the coming season. The Cape Porpoise Land Company, at the head of which is Hon. E. M. Goodall, the Sanford plush manufacturer, have purchased Trott's island and other islands near Cape Porpoise on the York county coast, and it is the intention to extensively develop the property thus acquired, the programme including the extension of the Mousam River Electric Railroad to Cape Porpoise. The Seashore Company have decided to still further enlarge the Ocean Bluffs Hotel at Kennebunkport, and an addition of forty rooms will be completed in season for the accommodation of guests during 1898. Biddeford Pool has rare attractions as a resort and numerous improvements will be inaugurated there in the near future. The Old Orchard Pier Company, at the head of which is Henry W. Staples of the palatial Old Orchard House, expects to have their ocean pier completed by early summer, 1898. Contracts have been closed with the Berlin Bridge Company, and this mammoth pier is to be in readiness for the landing of steamers by June 20th. The total length of the prospective pier will be 1,770 feet, and the structure, when completed according to the

plans shown, with all its appurtenances of handsome pavilions, recesses and landings for steam and sailing vessels and row boats, will constitute an attraction such as no other New England seaside resort can boast. The plan for the proposed pier will be similar to that submitted two years ago. The pier will be 1,500 feet long with a deck twenty-five feet wide. At two points along it, will be large recesses or side extensions forty by sixty feet each, and at the extreme sea end there will be a large pavilion seventy-five by 125 feet. The pavilion will be used as a cafe and casino. At the shore end will be ticket and other business offices. The pier will be about twelve feet above high water mark, and at the shore end an incline or a flight of steps will be necessary to give access to it. It will be high enough and the iron piers will be far enough apart so that it will not prevent walking or driving along the beach. At the outer end a wooden projection to serve as a wharf for steamers or other large craft will be built, while along the side of the pier will be rafts and other conveniences for small boat landings. It is calculated that there will be seventeen feet of water at the outer end at low tide, so that vessels of large draft may touch there. The rise of the tide will increase this depth ten or twelve feet.

Portland's hotels during the summer of 1897, were taxed to their utmost limit, and it is the expectation that on an eligible site in the city will be erected at an early day a hotel of colossal proportions and elegant furnishings. Riverton Park, Portland's magnificent suburban resort, is destined to be further improved and beautified, while across the harbor on the Cape Cottage site is to be erected a large building, costing between \$8,000 and \$10,000. The new casino is to have broad and attractive piazzas, divided by glass partitions, and will be kept open summers and winters, with Caterer Robinson in charge. L. P. Huntoon of Brunswick, is to erect on the Orr's Island road, near the Orr's Island cottage, a two-story summer hotel, sixty by twenty feet in size, and with piazzas on three sides. Hotel Rockledge, near the mouth of the Kennebec, is to receive additions and will be otherwise improved. A new hotel is in progress of erection at Southport. A hotel is projected to be built on the northerly shore of Cobbosseecontee lake, an inland resort in Kennebec county, that is now rapidly coming to the front as

a resort for sportsmen and tourists. Fred B. Jenkins of New York, contemplates building a summer hotel on Coy's Cove, Lake Maranacook, and has already purchased the land from D. B. Friend. E. B. Wharff is to build a set of ten camps on Lake Mooselookmeguntic, below Camp Haverhill. Charles H. Randall is to build several new camps at Randall's Camp, on the West Branch Ponds, above Katahdin Iron Works.

Many costly cottages are to be erected at eligible localities along the Maine coast, before the advent of the season of 1898, and numerous camps are in contemplation by sportsmen along the lakes and among the forests of northern Maine. Never has the outlook for the future of Maine's summer resort business looked more promising than to-day.

THE SUMMER BUSINESS OF THE MAINE WOODS.

More than a half century has passed since Henry D. Thoreau, one of America's greatest writers, first visited the wild regions of northern Maine. He visited first in 1846, and wrote "Kattadn." "Chesuncook" followed in 1853, and "The Alagash and East Branch" in 1857. These were first published in the Atlantic Monthly and other magazines, and afterwards made that exquisite American classic known as "The Maine Woods." Up to that time comparatively little was known by the people of other states of the grandeur of northern Maine scenery or its multitudinous attractions as a summer resort. In fact, it was not as fashionable in those days for dwellers in cities to seek rest in "God's first temples" by the side of lake and river, as it has since become. It is not at all likely that Mr. Thoreau realized that his literary work was to advertise to his fellow countrymen the glories of a great natural park that seems to have been fashioned by the hand of the Creator as a breathing place for weary mankind. But this was the result. The Maine woods have become immortal through this American classic just as the Adirondac region did in later years by the charming tales of W. H. Murray. It is estimated that there is more than 15,000 square miles of wild and primitive lands in the "Pine Tree State," of which, probably, 1,500 square miles is covered by lakes, ponds, rivers, streams and brooks. This estimate includes only that portion of the wild lands that is situated in unorganized townships. An accurate estimate of all uncleared lands and waterways in incorporated towns would considerably swell these figures. These lands are largely in the counties of Piscataquis, Aroostook, Franklin, Washington, and the northern parts of Penobscot and Somerset. They are owned, with

the exception of a few public lots, by individuals and private corporations, the State not now being the owner of any. The whole area is mountainous and the prevailing growth is spruce with a mixture of other hard and soft woods indigenous to northern Maine. The spruce of Maine, unlike its pine, is reproductive. The owners of these lands desire to preserve them in their primitive state, as they are much more valuable for raising timber for the market than for settling purposes. Thus it is not at all probable that the Maine woods will ever be transformed by the inroads which are the usual consequences of civilization's onward march and which has been the case in many other similarly situated sections of our country. Within its broad and magnificent domain is the largest lake wholly within New England, Moosehead lake, forty miles in length, and thousands of smaller ones intermingled and interwoven with a labyrinth of streams and rivers all connected with the great water arteries like the Kennebec and Penobscot rivers, which flow to the Atlantic ocean.

The Massachusetts Bay Colonial Ordinance of 1641, more particularly defined in 1647, is the common law of Maine relative to the rights and privileges of the public to the use of all of our lakes legally known as "great ponds," being ponds or lakes of more than ten acres in area. (See Barrows vs. McDermott, 73d Maine Reports, 441.) By the terms of this ordinance as settled by this important decision, this class of waters is free to the public for "fishing and fowling," and no trespass can be committed in going to and from such waters unless one passes over improved or enclosed lands.

Among the attractions of the Maine woods, which annually draw to its confines thousands from metropolitan life as surely as the magnet draws the grains of steel, is the superabundant supply of wild game, game birds, and game fish. The moose, deer, caribou, bear and many other animals, have their homes in Maine's wild lands. When Mr. Thoreau visited the Maine woods he regretted that he did not chance to hear the wild and terrible baying of wolves, but he says that some of his friends, moose hunting in the same locality, were fortunate enough to hear a pack which "sounded as if a hundred demons had broke loose." Since then the wolves have entirely disappeared from

Maine, and it has been more than twenty years since any indications of them have been discovered. It can, therefore, be truthfully stated that there are now no dangerous wild animals in the State, neither is there a poisonous reptile within its borders.

The spotted or square-tailed brook trout (*salmo fontinalis*) and the larger trout known as the lake trout or togue are natives of and abound in all these waters. Land-locked salmon are also natives of several lakes in Maine, and the Maine Fish and Game Commission is rapidly filling other waters with this very desirable and popular game fish. Pickerel, white perch and black bass are practically unknown in the wilderness lakes and rivers, but are found in waters nearer the haunts of civilization. White fish, similar to those of the great Western lakes, have always been in Moosehead lake, and smelts are generally found with the land-locked salmon.

These waterways in the Mainewoods are so vast and extensive that parties often make canoe journeys of 200 miles over them, having but a few short "carries" during the whole distance. Parties making these trips are for weeks within the very inbeing of Nature, having wild beasts for companions, and actually reposing for a season upon the yielding bosom of kindly mother earth. To many such their first visit to these primeval retreats where everything within their vision is of the pre-historic, just as the red man left it, is a revelation. They are in a new world, live a new life and receive a new lease of longevity. Is it any wonder, then, as palace cars now run from Boston to the borders of this enchanted land, that the number of those who desire this annual regeneration is rapidly increasing? Is it any wonder that more than 1,300 guides well skilled in wood craft, in canoeing, in following game to its lair, in rowing boats to the best spring-holes where the fascinating trout are hiding, and abounding in all kindly attentions to "city visitors," were registered in Maine under the new guide registration act of 1897? Is it any wonder that this has now become, in fact as well as in fancy, one of the leading industries of Maine? It gives generously paid employment to thousands of laborers in the woods, on the lakes, in hotels and sporting camps, upon inland steamboats and upon farms as well; for the husbandman of Maine, especially he who resides in settlements skirting the borders of this great wilder-

ness and who most needs the ready market and enhanced prices for farm products created by the advent of the tourist, angler and camper-out, is not the least among the throng of beneficiaries of this summer business in the Maine woods. It is now recognized and acknowledged as one of the most valuable and important industries of Maine by her bankers, railroad managers, merchants, and intelligent farmers, and especially by the press of the State. The people of Maine appreciate its worth and its influence upon our trade and commercial conditions, and show their appreciation by liberal appropriations from the legislature, wise enactments to protect the fish and game, and a sound public sentiment to sustain the game and forest commissioners in enforcing the laws made for the protection of game, and the forests from fires. In this, and in innumerable other ways, Maine has shown a just appreciation of its benefits and a determination to foster and develop it.

Thus the State of Maine, through its wood lands, not only produces a valuable winter crop of timber, but its fragrant ozone and pure air, its spruce clad mountains, noble rivers and charming lakes, its wild animals, its fish in the sparkling waters, its sweet singing birds, glorious scenery, crimson sunsets and blue skies are a summer crop whose harvest is golden.

The development of this business of the wilderness has, in the past, as it ever will in the future, depended upon the changes constantly going on in the social habits of the American people. The increasing tendency of urban society is to flee to the mountains, lakes and forests for a respite from the feverish battle of life. This, the fruitage of the progress of the age, the grander education, the higher refinement and culture of today. Never before has camping out and "roughing it" in the Maine woods been considered such a luxury, the pliant rod such a fascination, and the long range rifle such a delight, as at the present time. The patriotic citizen who has Maine's truest interest at heart will do all in his power to promote these interests.

POPULATION.

Part III of the Compendium of the Eleventh Census has recently been issued, from which the following facts in regard to the population of Maine and of Maine born people, in 1890, are taken.

Table 1 shows the birth place, by states and territories, of the native population of Maine; table 2 the birth place, by countries, of the foreign population of Maine; and table 3 shows the place of residence of Maine born people by states and territories.

Following this, table 4 shows the conjugal condition of the population of Maine, and table 5 the illiteracy of Maine people over ten years old compared with that of the United States:

TABLE I.—American Born.

Maine.....	553,962
New Hampshire.....	7,640
Vermont.....	1,575
Massachusetts.....	10,386
Rhode Island.....	659
Connecticut.....	540
New York.....	2,307
New Jersey.....	287
Pennsylvania.....	631
	557,987
Total in North Atlantic Division.....	557,987
Delaware.....	23
Maryland.....	115
District of Columbia.....	67
Virginia.....	223
West Virginia.....	17
North Carolina.....	62
South Carolina.....	42
Georgia.....	66
Florida.....	44
	659
Total in South Atlantic Division.....	659

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Ohio.....	243
Indiana.....	67
Illinois.....	235
Michigan.....	153
Wisconsin.....	231
Minnesota.....	150
Iowa.....	117
Missouri.....	55
North Dakota.....	4
South Dakota.....	5
Nebraska.....	34
Kansas.....	50
Total in North Central Division.....	1,344
Kentucky.....	42
Tennessee.....	35
Alabama.....	17
Mississippi.....	24
Louisiana.....	42
Texas.....	23
Indian Territory.....	1
Arkansas.....	18
Total in South Central Division.....	202
Montana.....	11
Wyoming.....	2
Colorado.....	22
New Mexico.....	8
Arizona.....	3
Utah.....	6
Nevada.....	24
Idaho.....	5
Washington.....	17
Oregon.....	14
California.....	271
Alaska.....	1
Total in Western Division.....	384

CORRECTION.—On the preceding page, the figures for the "Total in North Atlantic Division" should read 577,987, instead of 557,987 as there printed.

In United States, state not specified.....	1,400
At sea under United States flag.....	37
American citizens born abroad.....	112
	<hr/>
Total not included in states.....	1,549
	<hr/>
Total American born.....	582,125

TABLE II—Foreign Born.

Canada and Newfoundland.....	52,076
Mexico.....	8
Central America.....	15
South America.....	22
Cuba and West Indies.....	92
Ireland.....	11,444
England.....	7,276
Scotland.....	2,285
Wales.....	215
Great Britain, not specified.....	10
Germany.....	1,104
Austria.....	58
Holland.....	16
Belgium.....	21
Switzerland.....	29
Norway.....	311
Sweden.....	1,704
Denmark.....	696
Russia.....	420
Hungary.....	16
Bohemia.....	3
Poland.....	54
France.....	441
Italy.....	253
Spain.....	53
Portugal.....	70
Greece.....	2
Asia, not specified.....	9
China.....	76
Japan.....	4
India.....	22

Africa	11
Atlantic Islands.....	17
Australia	25
Europe, not specified.....	28
Pacific Islands.....	10
Sandwich Islands	2
Turkey	3
At sea	60
Total foreign born.....	78,961
Total American born.....	582,125
Grand total	661,086

TABLE III—Maine Born.

Maine	553,962
New Hampshire	14,876
Vermont	1,667
Massachusetts	86,988
Rhode Island.....	3,716
Connecticut	3,037
New York.....	7,837
New Jersey	2,086
Pennsylvania	3,252
Total in North Atlantic Division.....	677,421
Delaware	222
Maryland	693
District of Columbia.....	933
Virginia	435
West Virginia	246
North Carolina.....	163
South Carolina	134
Georgia	392
Florida	899
Total in South Atlantic Division.....	4,117
Ohio	2,111
Indiana	1,075

Illinois	6,445
Michigan	4,332
Wisconsin	6,656
Minnesota	12,847
Iowa	4,539
Missouri	2,048
North Dakota	959
South Dakota	1,752
Nebraska	3,477
Kansas	3,040
Total in North Central Division.....	49,281
Kentucky	274
Tennessee	367
Alabama	270
Mississippi	100
Louisiana	283
Texas	795
Oklahoma	83
Arkansas	279
Total in South Central Division.....	2,451
Montana	1,722
Wyoming	418
Colorado	3,192
New Mexico	231
Arizona	367
Utah	489
Nevada	721
Idaho	663
Washington	5,585
Oregon	1,929
California	15,623
Total in Western Division.....	30,940
Total in United States.....	764,210
Maine born living in Maine.....	553,962
Maine born living outside of Maine.....	210,248

DEDUCTIONS.

The population of Maine was made up as follows:

Born in Maine	553,962
Born in the United States, outside of Maine.....	28,163
Foreign born.....	78,961
	<hr/>
Total	661,086
Percentage of Maine born.....	84—
Percentage of other American born.....	4+
Percentage of foreign born.....	12—

Of the 764,210 Maine born people living in the United States, 553,962, or 72.5 per cent of the whole were living in Maine, while 210,248, or 27.5 per cent were living in other states and territories. This, of course, does not include the large number of Maine born people living in the Canadian Provinces and other foreign countries.

TABLE IV—Conjugal Condition.

Native White—Native Parents.

Single males	133,950
females	118,546
total	252,496
excess of males.....	15,404
Married males	108,228
females	108,739
total	216,967
excess of females	511
Widowed males	9,925
females	24,626
total	34,551
excess of females.....	14,701
Divorced males	991
females	1,175
total	2,166
excess of females.....	184
Unknown males	470
females	53
total	523
excess of males	417

Native White—Foreign Parents.

Single males	29,628
females	26,495
total	56,123
excess of males	3,133
Married males	7,836
females	8,244
total	16,080
excess of females	408
Widowed males	467
females	1,047
total	1,514
excess of females	580
Divorced males	46
females	89
total	135
excess of females	43
Unknown males	10
females	3
total	13
excess of males	7

Foreign White.

Single males	17,201
females	14,494
total	31,695
excess of males	2,707
Married males	21,013
females	19,909
total	40,922
excess of males	1,104
Widowed males	1,655
females	4,155
total	5,810
excess of females	2,500
Divorced males	55
females	72
total	127
excess of females	17

Unknown males	129
females	12
total	141
excess of males	117

Colored.

Single males	586
females	432
total	1,018
excess of males	154
Married males	342
females	292
total	634
excess of males	50
Widowed males	53
females	110
total	163
excess of females	57
Divorced males	2
females	1
total	3
excess of males	1
Unknown males	3
females	2
total	5
excess of males	1

Aggregate.

Single males	181,365
females	159,967
total	341,332
excess of males	21,398
Married males	137,419
females	137,184
total	274,603
excess of males	235
Widowed males	12,100
females	24,626
total	36,726
excess of females	12,526

Divorced males	1,094
females	1,337
total	2,431
excess of females	243
Unknown males	612
females	70
total	682
excess of males	542
Recapitulation.	
Native white, native parents, males	253,564
females	253,139
total	506,703
excess of males	425
foreign parents, males	37,987
females	35,878
total	73,865
excess of males	2,109
Foreign white, males	40,053
females	38,642
total	78,695
excess of males	1,411
Colored, males	986
females	837
total	1,823
excess of males	149
Total males	332,590
females	328,496
aggregate	661,086
excess of males	4,094
Total single	341,332
married	274,603
widowed	42,038
divorced	2,431
unknown	682
aggregate	661,086

TABLE V—Illiteracy.

The following shows the total population over ten years old, number and percentage of illiterates by sex and classes in the United States and in Maine in 1890.

Native White, Native Parents.

Males, United States	12,901,102
Maine	208,575
illiterates, United States	888,415
Maine	4,464
percentage of illiterates, United States.....	6.89
Maine	2.14
Females, United States	12,474,664
Maine	209,550
illiterates, United States	1,002,308
Maine	2,974
percentage of illiterates, United States.....	8.03
Maine	1.42
Total, United States.....	25,375,766
Maine	418,125
illiterates, United States	1,890,723
Maine	7,438
percentage of illiterates, United States.....	7.45
Maine	1.78

Native White, Foreign Parents.

Males, United States	3,895,395
Maine	25,067
illiterates, United States.....	89,993
Maine	2,372
percentage of illiterates, United States.....	2.31
Maine	9.46
Females, United States	3,873,026
Maine	23,643
illiterates, United States	84,284
Maine	1,633
percentage of illiterates, United States.....	2.18
Maine	6.91
Total, United States.....	7,768,421
Maine	48,710
illiterates, United States	174,280
Maine	4,005
percentage of illiterates, United States.....	2.24
Maine	8.22

Total Native White.

Males, United States	16,796,497
Maine	233,642
illiterates, United States	978,408
Maine	6,836
percentage of illiterates, United States.....	5.83
Maine	2.93
Females, United States	16,347,690
Maine	233,193
illiterates, United States	1,086,595
Maine	4,607
percentage of illiterates, United States.....	6.65
Maine	1.98
Total, United States	33,144,187
Maine	466,835
illiterates, United States	2,065,003
Maine	11,443
percentage of illiterates, United States.....	6.23
Maine	2.45

Foreign White.

Males, United States	4,781,748
Maine	37,318
illiterates, United States	539,314
Maine	8,828
percentage of illiterates, United States.....	11.28
Maine	23.66
Females, United States	4,005,139
Maine	36,004
illiterates, United States	608,257
Maine	8,837
percentage of illiterates, United States.....	15.19
Maine	24.54
Total, United States.....	8,786,887
Maine	73,322
illiterates, United States	1,147,571
Maine	17,665
percentage of illiterates, United States.....	13.06
Maine	24.09

Colored.

Males, United States	2,774,414
Maine	827
illiterates, United States	1,490,500
Maine	268
percentage of illiterates, United States.....	53.72
Maine	32.41
Females, United States	2,708,071
Maine	678
illiterates, United States	1,621,628
Maine	211
percentage of illiterates, United States.....	59.88
Maine	31.12
Total, United States	5,482,485
Maine	1,505
illiterates, United States	3,112,128
Maine	479
percentage of illiterates, United States.....	56.76
Maine	31.83

Aggregate.

Males, United States	18,735,980
Maine	258,587
illiterates, United States	2,966,421
Maine	11,676
percentage of illiterates, United States.....	15.83
Maine	4.52
Females, United States	18,025,627
Maine	261,082
illiterates, United States	3,273,537
Maine	10,494
percentage of illiterates, United States.....	18.16
Maine	4.02
Total, United States	36,761,607
Maine	519,669
illiterates, United States	6,239,958
Maine	22,170
percentage of illiterates, United States.....	16.97
Maine	4.27

EXTRACTS FROM "PROCEEDINGS" OF THE
NATIONAL ASSOCIATION OF OFFICIALS OF
BUREAUS OF LABOR STATISTICS.

The thirteenth annual convention of the National Association of Officials of Bureaus of Labor Statistics met in the Senate Chamber of the state capitol at Nashville, Tenn., May 19, 1897, at 10.15 o'clock A. M., President Carroll D. Wright in the chair. In calling the convention to order, the president spoke as follows:

Fellow Chiefs and Commissioners: For the second time in the history of our association we meet in a Southern city. At the second convention, which occurred in 1884, when there were only six or seven Bureaus of Statistics of Labor in the United States, we met in St. Louis. Since then all of our meetings have been either in the North or West; but we can congratulate ourselves now upon meeting in this Southern city, and it may be that our deliberations here will be of some service, not only to the city of Nashville, but to the state of Tennessee, and with this thought in view I trust you will excuse me if I speak somewhat at length this morning in opening our convention.

The question is often asked, and we have answered it every year: What is the purpose of this chain of offices, reaching from Maine to California, and now numbering thirty-three in all, with a Federal Department of Labor whose general purposes and motives are the same as those which actuate the state offices? The impression generally prevails among those who have not come in close contact with the results of the work of these bureaus, that they are in some way connected with various propaganda or with labor agitation, that their purpose

is to secure certain things in the way of legislative concessions to labor or to help make attacks upon capital. Nothing is farther from the truth than this impression. Our bureaus belong to the educational functions of the state. We have nothing to do with solutions, except in so far as facts properly and honestly collected and accurately and scientifically analyzed and published may help in the solution of some of the difficult problems which confront us everywhere in these closing years of the nineteenth century. The labor question occupies a different position each succeeding decade or generation. What it may have been once does not indicate what it is now. Formerly the labor question was a very narrow one, and consisted simply in the proposition, How can wages be raised or the working hours per day reduced? And the demand of the wage worker in former times was for an increase of wages or a decrease in the hours of labor, or both, with a view to elevating his standard of life. You should remember that when this demand was first made wages were paid in accordance with David Ricardo's old and well known "iron law of wages," under which the rate of wages was fixed at a point which simply covered the absolute physical necessities of a man, his clothing, his food, and his shelter. This much was to be granted for day labor, simply that the physical machine, the working anatomy, should not depreciate in value; but in the last generation or two there has come something beyond this which means more than the mere physical wants of man, and this something else relates to the workingman's interest in society, how he can receive wages enough to enable him to become what he has been made everywhere, a political, a social, and a moral factor in the community. He now receives in wages from 10 to 15 per cent margin above the rate which the "iron law of wages" would fix as his compensation for so much labor rendered. This extra demand for some of the elevating and spiritualizing influences of life lies at the bottom of the labor question to-day; and so it means sociology as a whole, the science of society—how can society grow, and grow in the very best way, so that all men shall receive something of the things in this life which mean culture, education—art, even.

This demand wherever you meet it is evidenced by what we call "social unrest," and it is the function of these offices which

we represent to contribute facts, and facts only, which shall help us to understand the meaning of this social unrest and enable us to determine, if possible, whether there shall be any danger in it, or whether the social unrest means something that shall carry civilization still farther up in the advance of the times. Then what is the labor question concretely stated? The underlying factors of the labor question had their origin so long ago, that history gives no account of them, as far back as when a certain tribe lived on the table lands of Central Asia, away back of the historic period, and so far back that all we know of it comes from the Sanscrit. This tribe grew refined; it became intelligent; it built boats, and steered them in the streams with a rudder, and propelled them with oars as we do to-day; it wove cloth; it did many things that indicate a higher sense of true civilization; and then, gentlemen, commenced that great fever of unrest, which has followed the Aryan race to this moment, and will follow it until the end, whenever that may be, thousands or millions of years hence, and it is to this unrest that our Western Hemisphere owes its existence as a populated land. As soon as this tribe, that grew somewhat refined, found itself in that position, the ambition seized its members and a portion of the old tribe came down from the table lands of Central Asia and found itself wandering westward. Other sections came down behind them and pushed on those that were in advance, and they crossed the eastern waters and settled the Hellenic states. They made Central Europe what it is, and, finally, crossed the English Channel and settled Great Britain, and soon they found themselves fretting on the outmost western rock of the Irish coast, with just as much unrest in their souls as they ever had during the centuries back of them, and they peered into the western ocean and finally one of their number, one day in October, in 1492, found himself still peering from the deck of his battered little caravel into the west, and this great continent was discovered. More of his tribe kept sweeping on and sweeping on, settling a fringe all along the Atlantic coast, crossing the rivers, and finding themselves at last beyond the Mississippi, until now the sons of this old, ambitious Aryan race are fretting on the outmost western coast of this country. Whether or not they will in time sweep

over the Pacific and reach again the table lands of Central Asia is a great question in sociology, but my reason for referring to this fact is to show you that the unrest which made this country what it is, is of the remotest origin, and we Americans find in our veins to-day the very life blood which made those characters thousands of years ago distinctive, and this unrest has followed us, and is following us, and we are feeling it in accessions as the generations pile up in the passage of time.

This, gentlemen, concretely, is the labor question of to-day. What shall be done with this unrest; how shall it be shaped; not whether it can be killed, but whether the struggle under it can be softened, can be guided, can be moulded into some force which shall mean the very best for human conditions. So, when we speak of the labor question in the narrow sense it is because we do not comprehend it; but what our bureaus mean when they use the term "labor question" is the physical, the moral, and the social condition of the great bulk of the people that make the world go after all. Therefore, when we contribute facts, when we investigate conditions, we are simply contributing something to help legislators, to help philosophers, economists, writers, and students everywhere to know better how to soften these conditions, and how to help the common man to a higher and more elevated standard of living. Not to solve problems, because no one of them can be solved; there is no complete solution of the labor question in all its phases, and when a body of men find a solution for all of the existing problems of to-day I want to assure you that immediately after you will witness the death of industry and a stagnation of the community at large. There is a great deal of pathetic talk about unrest, about discontent, and there are several kinds of discontent which prevail; but the discontent that is legitimate is that which impels men, always and ever, to seek better conditions. That is what has brought millions across the stormy western ocean to settle in this land; that is what has made the United States what it is; that is what is building the South into a great industrial empire. Now, as facts are collected, classified, and systemized, we find that out of them all, which means the knowledge of conditions as they are, there is growing a new political economy, which Henry D. Lloyd has defined. I will use his words:

“There is a new political economy, which looks first ‘to the care and culture of men.’ There is a new struggle for life, the life of others. There is a new science which finds man in the same womb with the fish, the dog, the serpent, the bird, and traces his lineage back to brotherhood with the humblest life of the planet. There is a new self-interest of the individual who puts his family before himself, his country before his family, mankind before his country, because there is filtering into his consciousness the vast fact that his share of what is done for him by mankind is of far more value to him than what he does for himself. There is a new self-interest of the community which is going into the slums, factories, mines, sewers, to make all safe by making its weakest safe. There is a new state, the organized body of Christ, which feeds the hungry, heals the sick, and visits those in prison, and gathers up the children. There is a new religion,—a religion of progress, and of man as a partner in the creation of that progress, creating new ideas, new species of plants and animals, new men and new society. Mankind prays to the ‘All-Perfect Father,’ but as it utters the words the indomitable within whispers that if God should stop at perfection man would pass Him by.”

There is a new political economy, then, and the facts which we are helping to collect are assisting in its creation. This new political economy seeks the co-ordination of ethical forces with economical forces. Now you see how difficult it is, if I am right in this position, to solve any problem. Our bureaus contribute the facts which show all there is in arbitration, and yet we all recognize that industrial arbitration is not a solution of the great labor problem itself, as has been contended. We contribute facts to show the relation of the alcoholic liquor traffic to crime, insanity, and pauperism, but we know well that the economic complications of this traffic cannot be removed at the present time. We know that however desirable it may be, that temperance principles should prevail, there are great economic difficulties in the way, one of which is that should you wipe alcohol from the face of the earth, you would turn 90,000,000 bushels of corn back on the farmer, throw millions out of employment, and destroy the activity of a billion dollars of capital. Can such a state of affairs be brought about instan-

taneously by legislation or any other process and not disturb the whole industrial equilibrium of the country? Our bureaus show the facts relating to employers' liability; they do not argue, but they show conditions, and thus our legislators are able to discuss with intelligence such a problem as that of employers' liability when it comes up.

There are many other features to which we contribute, but we know they are not solutions. A legislature cannot solve economic problems, any more than can the voluntary remedies which are projected, such as an increase of wages, establishment of a system of profit sharing, co-operation, socialism, nationalism, or the ever present single tax. We all know that these are phases and not complete solutions. We know, says John Stewart Mill, that there is no one thing which can be done, which when done, will relieve the world of all the incongruities, misery, and unhappiness that exist. We know that these things need study and co-ordination, and it is only through the collection of facts, from bottom conditions, that these things can be of any service. The co-ordination of vital principles of competition and social service, the old economic man of Ricardo, the social man of to-day—a man who must believe and know that to meet success he must render the very best service that is in him to his community, and that it is the community's duty to render the very best service to the individual.

These bureaus are not socialistic, either. They do not preach the doctrine of socialism, even, as is sometimes the case, when the heads of the office may be socialistic in their tendencies. They know the difference between revolutionary socialism and constructive socialism. They know the iniquity and immorality, even, of granting equal compensation for unequal service. They recognize, on the other hand, however, all the vitality that there is in socialism, and that vitality consists in its being a criticism, not a philosophy nor a system. We know well that only in the character of men is to be found the solution of any problem. We know that in the elevation and the broadening of the individual is to be found the very best social system and the very best social standards. Now, with these aims before

it, this body of men meets annually for the purpose of discussing methods of how to reach these facts, which are so important in the consideration of the vexed questions of the day so far as they relate in any way to industry. If industry does not flourish and is not healthy, the community itself must suffer, for all society wherever it exists is dependent upon a vigorous condition of industry. We need not, therefore, advance any particular theory or advocate any particular solution, but simply content ourselves with going forward on the lines which have been laid out by our respective legislatures, which point out our simple duty of collecting facts and fearlessly publishing them, whether they affect our own individual theories or the theories of the party which may be in power at the time. It is only in this way that we can help the nation and help the state and constitute as time goes on the true remedy which lies in the practical application of some of the simplest rules of that great body of principles known as Christianity. This may sound very much like a platitude, but if there be any other way, no philosopher or economist has yet discovered it.

So, to provide solutions, and to give mankind a better standard of living, the attack must be made all along the line and not at any one point. Dr. William T. Harris, the commissioner of education, has defined a crank. He says a crank is a man who sees something very clearly, but not in its relations; and it is so in the attempts to solve phases of the labor problem. One man sees a thing very clearly; he sees that the temperance question involves the happiness and economic conditions of men, and he thinks that if temperance principles could only prevail the world would be happy. Another man ignores that and says, "If you can only establish industrial arbitration you will settle all your difficulties." Another man thinks that the eight-hour day would solve the problem and remove all difficulties attending industrial conditions. All these things are good, but they must be considered together in their relations one to the other, or else you are simply setting up bricks to be knocked down. Our duty, then, whether as commissioners of labor, or in whatever capacity we may serve, is to help contribute to the sum of knowledge which shall ultimately soften this struggle without attempting to remove that divine discon-

tent which makes the world what it is, and which gives us whatever civilization now exists. With these views our bureaus exist, and as the knowledge of their purposes and motives is better comprehended in states and in communities, we advance along true lines, and it is a great pleasure to me to say to you gentlemen of Tennessee who are present this morning, that you have representatives in the United States Senate and in the House of Representatives who have always stood behind and helped along this kind of work, knowing very well that there is no partisanship in it, no politics in it, no propagandism in it, but simply an effort to contribute something to the sum of general knowledge.

The president introduced Dr. Frederick W. Moore, of Vanderbilt University, who addressed the convention as follows:

ADDRESS OF DR. FREDERICK W. MOORE.

Mr. President, Commissioners, and Gentlemen:

For the reason that my business in life is so different from yours, I trust I may be permitted to say the few words that I have in mind by way of preface. I want to express to you the personal pleasure and profit there is to me in meeting such an assembly as this. Like the mythological character of old, who gained strength by touching the earth, I, too, gain a great deal of strength for my work by coming in contact with you. You come with the statistical data, the statistical information, and the new laws and precepts that it is my business to present in the class room. It certainly gives me courage and confidence when the older principles that I have to proclaim are reaffirmed by you, and when I find mistakes in my work as tested by yours, you come with new factors or a revaluation of old factors that conclusively prove what is right and what is wrong. I therefore gain a great deal of confidence, of courage, and of information from contact with you. Having said this, and expressing my very high appreciation of the honor of an opportunity to address you, perhaps I might do well to sit down and listen further; but I will venture to avail myself of this opportunity to speak and will try to read some things that I have prepared.

My attention has for some years been drawn to the agricultural question. I have been impressed with the thought that if farming were conducted upon strict business principles by thrifty men who would intelligently use the technical information which seems easily within their reach through governmental and other channels, farming would not be such an unprofitable business as it is commonly reputed to be. I express this opinion, with all modesty, simply because it furnishes the motive—the motif as the musicians would say,—of the medley of considerations which I venture to offer.

(1) It is a commonplace that the prosperity of the nation depends upon the prosperity of the farming class more than upon that of any other class of people. What does this mean, and is it true? There is possibly a trace of Physiocratic doctrine in it; or a reference to the political fact that the small proprietary farmers have been considered the back-bone of every enlightened and liberty-loving nation; or, more likely, it has reference to the ultimately absolute necessity of a food supply. But certainly the United States are not threatened with famine or even with high prices for food. American farmers are producing a surplus which overflows to other nations; and, by a well known law, the whole sells uniformly for the price of the portion least in demand. American agriculture is depressed; but American consumers are abundantly supplied and cheaply. Consumers' rent is large. Until the world's food supply shall have reached its maximum in quantity and its minimum in price, American farmers must necessarily produce on a vanishing margin; while others gain through their embarrassment. Directly, therefore, the welfare of the nation does not depend on that of the farmers; and even if with less purchasing power, the farmers are forced to consume less, this indirect effect upon the national welfare will not be greater than if produced by the distress of any other equally large part of the population; an interpretation of the quoted proposition which deprives it of its sentiment without lessening its seriousness; for the agricultural class embraces nearly four-tenths of the population.

(2) **THE MARGIN OF CULTIVATION.** It is not necessary to do more than mention the wave of high land values that has

been sweeping across the country, as the facilities for transportation, and other favoring conditions have been extended and improved. Lands rose above the margin of cultivation as it advanced, and sank below the margin again as it receded.

Abundance of fertile land may seem a special boon to the farmer. But if supply presses on demand, as we have seen that it does in America, the price of the product will be fixed at the money cost of production and nature's bounty will inure to the benefit of the consumer alone.

The value of a farm should be reckoned, I think, at the value of the product capitalized at the market rate after current expenses have been paid. If the value thus estimated exceeds the capital invested in fixed improvements, the farm must be yielding rent or profit. If the value is less than the improvements, there is no rent; there is a loss, which is felt most acutely if the improvements were made with borrowed capital secured by a mortgage. How many Minnesota farmers, even after crediting themselves with wages and interest on fixed improvements, though debiting themselves with home grown supplies, have an economic rent left? I ask for information, not so much because the number is probably small, as because there are not sufficient statistical data for determining a matter that would be interesting in itself and would contribute to more intelligent management of farming business. I was gratified yesterday afternoon to notice that the commissioner from Wisconsin, in his report, mentioned a point bearing along this line and expressed nearly or quite the same opinion.

But the principle of the margin of cultivation may be applied to each several acre and crop in every farm or locality. Take one illustrative example cited from some untabulated returns in the report of the North Carolina commissioner for 1889 (p. 25 ff). Estimating wheat, corn and oats, respectively, at \$1.00, 50 cents, and 25 cents per bushel, he exhibits a farm yielding fourteen bushels of wheat, worth \$14 per acre; twenty bushels of corn, worth \$10.00 per acre; and twenty bushels of oats, worth \$5.00 per acre. Granted, though it seems so absurd on its face, that this group or combination of products was a wise one under some or all of the laws to be noted later, viz.: Rotation of crops to rest the soil, diversification of crops for insur-

ance against bad season and the principle of bye-products,— was it made accidentally, or empirically, or wittingly? I venture to suggest that careful statistics concerning such phenomena should be collected from a number of selected farmers during a period of years, and, what is equally important, our farmers must learn to appreciate the information thus obtained. But how long will they be in learning?

(3) The ordinary methods of business apply with equal certainty and rigor to farming. Agricultural chemistry has attained a development comparable to that of the chemistry and the mechanics of manufacturing. It is possible, it is profitable, it ought to be, and it is coming to be absolutely necessary to apply scientific methods to farming. In their use lies the greatest probability of success, the best protection against loss. Farmers, as a class, lack the methodical habits of the commercial man and accountant. It is traditional with them that accurate and complete accounts are useless. Their methods are largely empirical. There is also a large percentage of poor business men among them. The merchant or manufacturer who shows poor business qualities soon exhausts the possibilities of personal credit and chattel mortgage and becomes a clerk or a foreman. The farmer who is unsuccessful year after year, finally exhausts his farm, lowers his standard of living, but keeps on farming.

Neither precept nor example will avail much to improve those who are really lacking in managerial talents. Nor, perhaps, can the passing generation of farmers be expected to change much. But in the farmers' sons, who may be led to see a new field to gratify modest ambition on the farm, and in those who may be attracted from other pursuits, there is hope.

(4) The principles which in the textbooks on economics are used to explain international trade apply likewise to farming. Though a farmer may even have an advantage in each of two crops, if his advantage in one is appreciably greater than in the other, it will be profitable for him to raise the former exclusively and buy the latter. However, the tendency to the territorial distribution of products has had its run. If it ever was really possible, it is claimed that it will no longer pay the Mississippian to grow cotton, the Kentuckian to grow tobacco, or the

New Yorker to keep a dairy and buy his corn. Even in the Middle West the demand is for the diversification of crops. The new tendency appeals to experience for justification. The case, I think, is quite worthy of investigation and analysis. The figures may corroborate or contradict; they at least ought to explain.

1. Notice that the comparison is instituted between the wholesale selling price of the staple and the retail buying price of the supply crop, or its cost of production on the farm where it is consumed. As to the latter two in the case of corn, I am much inclined to doubt whether it can be retailed in our southern farming regions cheaper than it can be produced on the best grade of corn lands in cultivation.

2. Though the average cost of a staple to a farmer may be less than the selling price, the net price is made less than it should be by any portion that has cost more than the selling price to produce. Do the farmers carefully mind the margin of cultivation? It seems quite probable that in increasing the acreage of the staple, in his ambition to make a large crop or in order to buy the supply crop, the margin for the staple on the particular farm has been crossed and a double loss entailed on the farmer.

3. Corollary to these points, the land must be economized. Its relative adaptation to different crops, if arithmetically expressed, would certainly be instructive.

4. But even where the advantage would still seem to favor the sole production of a staple, a proper estimate of bye-products will put the net advantage on the other side. (a). The wheat and especially the clover which are rotated with potatoes on a successful potato farm in Middle Tennessee have a value not only for the grain and hay harvested, but as a substitute for fertilizers, that undoubtedly could be put into figures. (b). Moreover, wheat straw, corn fodder, and the like are bye-products of bye-products which are worth accounting.

5. If the margin of choice between several crops is a small one, the known irregularity of the seasons and the markets may make it advisable to cultivate all, in order to divide the risk and sacrifice the chance of a great profit on one for a guarantee against total loss.

6. There is opportunity for economizing labor. Wheat needs most attention at seedtime and harvest; corn at seedtime, weeding and harvest; dairying at the milking hour. To be sure there is loss of time in getting the milking hands late into the field and early away. But on the other hand, it is quite impracticable to distribute the labor of dairying evenly through the hours of a working day.

All of these items must enter into the calculation to show whether and why one farmer should confine himself to a staple while another should cultivate supply crops and bye-products also.

5. TRUCK FARMING. Truck farming has fairly transformed some sections of the country in recent years. The history of the development of this industry along the line of the Illinois Central Railroad in West Tennessee and Mississippi, for instance, would be very interesting, I am sure. This road has taken the initiative, offering good rates and quick through trains to the Chicago market, and distributing instructive literature on the kind of crops to be raised and the methods among the farmers, in order to build up its freight business.

Some of the economic characteristics of truck farming are interesting. It must be undertaken on a large scale within a limited area to get the quick transportation and low rates that are essential. The community must co-operate to this extent. Another absolute essential is an ample market, necessarily a large one. Success in one locality will stimulate other localities to prepare to enter the industry. The annual growth of the market will justify its extension somewhat. But at some point the equilibrium between supply and demand at the price of profitable cultivation will be reached. Suppose that just at that juncture a new community sends forward a carload per day of highly perishable goods on the sated market. Whither will the price go? Under such conditions the surplus supply will destroy the profits not only of the marginal producer but of nearly all concerned. Each new increment of supply is necessarily so considerable that such crises are almost inevitable. Truck farming is a highly speculative business. No community should dare undertake it on a guess.

6. For the occasional oversupply local canning factories may furnish an emergency demand. Without considering all the possibilities let us notice the single case of a co-operative factory or creamery for the purpose of bringing out one particular phase of the problem.

Business ethics and the confidence of man in men have developed as the years have passed and have made possible the vast credit system of modern times. But the progress has not been so great and has not extended so far, but that it is still extremely difficult to find a community of fifty farmers so just, upright and equitable in all their dealings as to command or even to merit each other's full confidence. Some will deceive; some will suspect over-reaching, even if it does not occur. Human nature is very fallible. It is quite as difficult to get a manager in whom the necessary confidence can be or will be placed. Be his reputation for integrity never so good, can he be trusted to exercise the utmost business keenness on a fixed salary or even if a premium is offered for extra efficiency; will he exercise the proportionately greater skill for the fractional part of a small profit? Success is not impossible; but if local co-operative factories are to meet with full and universal success, the average of business honesty and integrity must be raised. Economics here runs into social science and thence into ethics.

7. What is the future of the farming class? Will the farmers sink in the social scale, becoming a class of twentieth century serfs? Will tenant farming increase? Will there continue to be a large class of intelligent, successful, small farmers? I fear that I cannot satisfactorily answer my own questions. But some ideas along the line of thought which they suggest seem to me the most fitting conclusion to this paper. I venture therefore to give them. The isolation of farm life drives people to the city. The intellectual activities of the farmer, while high enough in individual cases, range far below the ideal standard. But with good cheap books, periodicals and newspapers, and the possibility of frequent free mail delivery, country life ought not to be depressingly dull.

We consider it unfortunate and even alarming when the standard of living is lowered or when the number of those on the lower standard is increased. The lower ranks are filled up from

two sources: From those who have weak characters, who, in a word, are unthrifty; little can be done for them. And secondly, from those who are overwhelmed and borne down by the accidents and conditions of their lot in life; such are many of the unfortunates who are the victims of the sweat shop. If given a chance to rise they will use it. Therein lies the great reward to those who offer them help.

For the thriftless farmer there is, perhaps, little hope; and it would be an unwise philanthropy that would bestow much compassion on him. But is there anything in the accidents and conditions of farming that should permanently depress the whole class? Is there any considerable section of the country where scientific farming by an intelligent, business-like farmer cannot be made profitable on a small farm which would require relatively little capital? Everywhere I have looked I have found some successful farmers, even under existing conditions; just as I have also found in the same localities others whose failure was abundantly explainable through their thriftlessness.

Few will be able to acquire lordly estates, or live in luxury on a farm. But a modest competence is possible; and that is as much as the better part of our population, speaking numerically and morally, have to-day. The farmer may continue to be the peer of the small trader and skilled mechanic. People from these walks in life have hitherto been the sturdiest in our population. They have supplied and should continue to supply worthy recruits to the large mercantile trades and the educated professions. The mechanic lives comfortably, acquires a home, or a small bank account or insurance note, trains his sons and daughters to homely labor, lives a useful life and dies respected. Intelligence, mental alertness, ability to use information, industry, self-respect, modest tastes—these are his characteristics, and they mark also the successful farmer. “May his race increase.”

In accordance with the invitation given by the convention last year at Albany, President Wright delivered the following address, entitled:

THE INDUSTRIAL PROGRESS OF THE SOUTH.

A generation ago two hostile armies composed of American citizens, and both magnificently general, were exchanging shots on American soil. Each army was fighting for what it thought a patriotic cause. With this cause we have nothing to do on this occasion; but American soldiery, as represented in those two armies and in their contest, convinced the world that, engaged in a common cause, it could not be withstood. At the close of the contest the South found itself under entirely different conditions from those existing when the contest began. Its social as well as its industrial system was completely reversed, its fields devastated, its railroads practically destroyed, its wonderful resources either unknown or entirely undeveloped, its political status uncertain in the extreme, an unknown material future before it—in fact, its people bankrupt, and only the people and the country with which to begin anew in the world. This is the account of stock of the South more than thirty years ago. Every wise business man must take an inventory occasionally in order to understand whether or not he is meeting with success in the enterprise that demands his effort; so the South must occasionally take its inventory and see if out of the account there can be drawn encouragement for future activity.

It is a trite saying now that history finds few parallels to the sublime patience displayed by the South during the years following the war; but I shall emphasize this statement, however trite it may have become. It is true that the patience displayed is unparalleled; but patience alone can never accomplish much. It is a negative quality, although one of the most essential elements in human affairs. Allied to activity, patience becomes something more than waiting. Patience alone depends upon fate. No country can prosper under patience alone; but when men put the activity and the courage into business, the development of resources, and the upbuilding of their land which they displayed so magnificently on the field of battle and in a four years' contest, then we can see the positive virtues of patience.

The past generation is divided into two natural periods. The first twelve or fifteen years was the period of patience. The

South was pulling itself together. It was adjusting itself to the new and strange conditions in which it found itself placed. I imagine the severest trials through which the Southern people passed were those of the years subsequent to the war when they were adjusting themselves or wondering whether any adjustment would ever come; but during that period men were prospecting the country, were ascertaining where the hidden wealth was stored, were showing the openings for future enterprises. The younger men of the South were learning that there were two aristocracies—the one which their fathers represented, the ever attractive, honorable aristocracy of blood, and that other aristocracy which claims admiration to-day, the aristocracy of enterprise, activity, and development; so while claiming to be the scions of the one, they became members of the other, and with the pride and the ambition which the first had furnished they put their shoulders to the wheel in making the newer aristocracy respected the world over. When that period of self-study, of patient waiting, of observation passed, the South found itself ready for the capital that had been waiting to enter its domain, and the last half of the generation has shown a progress not only remarkable for its extent and the diversity of its results, but magical, as we study its proportions.

The first source of wealth which attracted capital to the Southern States was hidden beneath the surface—the mineral deposits of the country—and it is well here to comprehend the vastness of this wealth. Mr. Edward Atkinson, one of the most intelligent observers of industrial affairs, recently published a pamphlet on “The Future Situs of the Principal Iron Production of the World.” To enable him to come to correct conclusions, he asked Colonel Geo. B. Cowlam of Knoxville, Tenn., and Major Goldsmith B. West of Tredegar, Ala., to make a report to him on the resources of the Southern Appalachian region, and especially its stores of coal and of iron ores, and the conditions favoring or obstructing the economical manufacture of iron and steel in the Southern States. This report is eloquent indeed with facts, and I cannot do you a better service or more correctly outline the wealth of the Southern States than by using its substance.

The Southern Appalachian region, while it does not cover all the iron and coal resources of the Southern States, probably con-

tains the great bulk of minerals of best quality. It embraces a strip of elevated mountainous country seven hundred miles long, with an average width of one hundred and fifty miles, and lies northeast and southwest in a course diagonally across a square formed by the 34th and 40th parallels of north latitude and the 77th and 87th meridians west from Greenwich, and extends from the Pennsylvania line, the great iron region of the North, southwestward through Maryland, the Virginias, Kentucky, Tennessee, the Carolinas, and into Alabama and Georgia. It is divisible into three strips, which run parallel with its side lines, and which are of substantially equal areas. The northwestern strip, running from Pennsylvania to Alabama, varies in width from more than one hundred to less than thirty miles, and averages over fifty miles wide. It is an unbroken coal field of more than thirty-nine thousand square miles, its surface being a combination of mountain and plateau, having an average elevation of two thousand feet above the sea level. This strip is cut through by two streams, the New River in West Virginia and the Tennessee in Alabama. In it are found generally from two to five workable seams, mostly above drainage, and so situated as to make the mines self-draining, an advantage of the greatest importance. In portions of West Virginia, Virginia, Kentucky, and Tennessee the measures are thick and the seams large and numerous. In Tennessee, north of Knoxville, there are sixteen seams above the drainage line, nine of which are three and a half feet thick or more. The seams in the states named are often found to be six or eight feet in thickness, and in some cases ten, twelve, and fourteen feet of solid coal can be worked, and this coal comprises every variety of bituminous coal, of the highest standard of excellence, high in carbon, and notably free from sulphur. There is also to be found block coal of the best shipping quality, unexcelled for steam or grate, splint coal of the best, and cannel coal, some of which will compare favorably with the celebrated Yorkshire cannel, and coking coal of the highest standard is found throughout the length of the coal field. The vastness of this coal area of the Southern Appalachian field is readily comprehended under the statement that it contains forty times the amount of coal, accessible to economical production and distribution, that was contained in the coal field of Great

Britain before a pick was struck. Great Britain has not begun to exhaust her store, and with the Southern Appalachian field, containing forty times the original coal deposits of Great Britain, the South may well feel that she has a bank of inexhaustible deposits on which no successful "run" can be made.

But in addition to the coal under the ground, the region I have described is, as a whole, heavily timbered with virgin forests of white, red, black, Spanish, and post oaks, yellow poplar, white and yellow pine, hickory, chestnut and other valuable woods. Its soil is of sandy loam and produces excellent crops of grass and small grains, it is productive of fine fruit and vegetable crops, and when enriched by lime or phosphates, or by grass crops turned under, it becomes fertile farming land. Overall the region there swings a bracing, dry air, and a pleasant temperature, which render it remarkably exempt from fevers and pulmonary diseases, while the frequent summer rains resulting from its elevation save its soil from summer drought. All these natural conditions are guarantees for favorable and economical mining and for cheap comfortable living.

The other great strips lying parallel with that described are rich in various kinds of ore, while in some portions the Bessemer ore is found in satisfactory quantities.

As a whole the Southern Appalachian region is wonderfully favored by its topography for development. A study of it shows a system of cross-lines. In the Virginias and Maryland the streams take their rise in the higher western ranges of the coal field and flow eastward, through the iron-bearing ranges, to the Chesapeake. In the Carolinas and Georgia the streams take their rise in the easternmost part of the iron-bearing ranges and flow through them to the valley, where they are met by streams flowing eastward from the coal field. Messrs. Cowlam and West, in their report, from which I have drawn so freely, speaking of the topography of this region, use the following language:

"Given the quantity and position of these belts of interdependent resources, and it is difficult to see how a skilled engineer could trace on a map lines more advantageous for their concentration and manufacture than the lines which nature has here drawn upon the face of the earth by streams which cut through, from the one side or the other, the mountain ranges or valley

ridges which separate them. Not only has she provided grades from the valley lines northward to the coal and southward to the ores, but cross lines to connect the region with the Ohio Valley and Lake country on the north and west and southward to the Atlantic, can be cheaply built. With this wealth of the South piled up in its central region, with natural outlet northeast to the Chesapeake, southwest to the Gulf, southeast to the Atlantic, and northwest to the Lakes, this great natural storehouse and workshop, the Southern Appalachian region, has a foundation for the creation of wealth certainly equal to that of any portion of the world of like area."

The annual production of coal in the Southern States* in 1880 amounted to 5,986,588 long tons, or about 9 per cent. of the total annual production of the entire country. In 1895 the production was 29,628,238 short tons, or 15 per cent. of the entire production, and an increase in the net annual production of 23,641,650 tons. This output required about 45,000 more miners and at least one-fourth as many more men doing day work in and about the mines, not counting coke workers, than were employed in 1880; and to haul the increased product to the market required 195 trains of 400 tons each per day more than in 1880, all of which affords support to over 300,000 people, including the families of those directly employed. But the greatest benefit this marvelous progress in the coal industry during the past fifteen years indicates is the growth in the manufacturing and the extension of the railroad interests.

In 1880, there was a total of 1,788 coke ovens in the South; by 1895 the number had increased to 16,856, being 37 per cent. of the total number in the United States and a net increase during the fifteen years of 15,065 ovens. The coke production of the South in 1880 amounted to 372,436 short tons, and in 1895 to 3,457,031 short tons, an increase in the annual production of 3,084,595 tons. In 1880 the production formed 11 per cent. of the total for the entire country, and in 1895 it formed 26 per cent.

With the development of the great coal fields of the Southern Appalachian region, the iron ore mines have been developed,

* Missouri has been excluded generally in the comparisons made in this address.

and the development is shown clearly by official statistics. The Southern States, in 1870, produced but 184,540 tons of pig iron. In 1880 the production was still small, being 397,301 net tons, or 9 per cent. of the total production for the United States; but in 1890 we see the results of ten years of prospecting, of development, and of activity in the 1,780,909 short tons of pig iron produced. In 1895 the amount produced was 18 per cent. of the total product of the United States.

On January 1, 1896, there were 133 completed blast furnaces in the South, with a total annual capacity of 4,531,350 long tons. The number of furnaces was 28 per cent. of the total number in the country, and the capacity 26 per cent. of the total capacity. At the end of the year, December 1, 1896, about 27.9 per cent. of the blast furnaces of the country were in the Southern States. The general decline during the year in the number of active furnaces in the North was about 42 per cent., as compared with a decline of 29 per cent. in the South. The output of the furnaces in the South declined about 15 per cent. during the year, while the output in the North decreased about 34 per cent.

In steel the South has not yet made much progress. In 1880 the number of net tons produced was 4,350 and in 1890 the production was 184,625 tons; that is to say, in 1890 the South produced almost exactly the same quantity of steel that she produced of pig iron in 1870. This is a most encouraging outlook, and bespeaks for the South a steel industry in the future of which she will be proud. Bessemer steel is not so distinctly a Southern product as pig iron, and no large deposits of iron ore suitable for making pig iron for conversion into Bessemer steel have yet been developed in the Southern States, with the exception of the Cranberry deposits in western North Carolina; but promising discoveries of Bessemer ore have been made in Texas and in other localities, and the development is taking place. These deposits may in time supply the raw material for a Bessemer steel industry at Southern points. The production of pig iron may well claim the present attention of the South rather than the manufacture of standard or acid or Bessemer steel.

The advantage which the South has in bringing together the materials of which iron is made are such as indicate that in the future the disadvantages as to freight or other obstacles will be fully overcome.

Prosperity in the iron industry naturally indicates prosperity in all other industries. It is one of the basic industries of any country. When it languishes, other industries are apt to droop; when it flourishes, we can usually look for flourishing conditions in other directions. But in the South the raising of cotton may be called the basic industry, for the cotton crop occupies a different position from others, because in general lines of industrial progress we have to look to a period of development, which is really the constructive industrial period of the South, and so the percentage of increase, up to a certain point of development, must be much larger, comparatively, than in other parts of the United States until such development shall have reached a point where it will begin to recede, relatively, but proceed on lines harmonious with the whole country. Cotton cultivation, therefore, as truly indicates the industrial growth of the South as does the development of the iron industry, and perhaps more truly, because of its long-continued supremacy. The largest crop in the Southern States prior to the war was in 1860, when 4,861,292 bales were produced. The cotton crop did not approach this quantity again until 1871, when it was 4,352,317 bales. In 1876 it nearly equalled the proportions of that of 1860; but since 1878 there has been no year when the crop has not been greater than at any time prior to the war, and in the year 1895 the production reached 9,500,000 bales, and about 700,000 bales of the product were consumed in Southern mills, as against less than half that quantity ten years before. But the value of the cotton crop has been enhanced by invention as well as by increased quantity. Prior to 1880 cotton seed had little or no commercial value, although at that time the attempts to extract the oil therefrom had resulted in the crushing of 294,519 tons, while in 1890 the cotton seed oil mills crushed 1,058,200 tons, the product being worth \$27,310,836, an increase in round numbers in ten years of \$24,000,000. In 1894 there were 252 establishments in the United States engaged in the cotton seed oil industry. The annual product of these establishments was valued at \$30,000,000. "An annual crop of cotton seed amounting to 4,500,000 tons would yield 202,500,000 gallons of oil. Although only about one-third of the crop now reaches the

mills, cotton-seed oil is now produced in larger quantities than any other vegetable oils. This oil finds ready sale in all the markets of the world.”*

The great increase in the consumption of cotton in the cotton mills of the South during the decade from 1880 to 1890 indicates that there has been a large increase in all the instrumentalities for the production of cotton goods. The number of cotton mills increased from 180 in 1880 to 254 in 1890; the number of spindles from 667,754 to 1,712,930, and the product from \$21,038,712 to \$46,971,503.

The number of cotton spindles in the United States increased from 13,470,981 in 1887 to 18,753,935 in 1896, an increase of 39.22 per cent. During the same period the number of spindles in the South Atlantic States increased from 1,180,604 to 2,980,113, or 152.42 per cent., and in the South Central States from 335,220 to 627,770, or 87.27 per cent. While the increase in the actual number of spindles was greater in the North Atlantic than in the Southern States, the relative increase in the North was much less, being only 26.39 per cent. The greatest percentage of increase, 328.54, in the South is shown for the State of South Carolina, where the number of spindles increased from 232,692 to 997,185. Considering the three States of North Carolina, South Carolina and Georgia, the gain for the ten years aggregated 1,772,527 spindles, while the gain in Massachusetts amounted to 2,460,522 spindles. In 1887 the spindles in these three Southern States amounted to 16.25 per cent. of the number in Massachusetts, while in 1896 they were 33.87 per cent. of the number in that state.

In 1880 there were 464 establishments for the manufacture of wool in the Southern States, while in 1890 there were but 261. This apparent decrease is due to the disappearance of custom carding mills, which formerly carded wool to be spun in families, and which were returned as separate establishments. These local carding mills have now almost entirely disappeared. There have probably been some consolidations as well, which would partially account for the decrease in number. But the decrease in number in no way indicates a decrease in other features, for the capital invested in woolen manufactures of the

* Farmers' Bulletin, No. 36, Department of Agriculture.

Southern States was \$3,343,527 in 1880 and \$9,064,406 in 1890. The average number of hands employed in the industry had increased from 3,038 in the year 1880 to 7,920 in 1890. The amount of money paid out in wages to these hands rose in ten years from \$563,825 to \$2,063,303, while the value of the product turned out increased from \$4,500,199 to \$8,434,020.

Of the total production of the three great cereal crops of the country, wheat, corn, and oats, for 1896, the Southern States produced 17 per cent. About 11 per cent. of these crops in the South was shipped out of the country where grown, a much larger per cent. being retained for domestic consumption than in the country at large, as about 30 per cent. of the entire crop was shipped out of the country where grown.

"The first steamship to cross the Atlantic sailed from Savannah in 1819.

"Of domestic exports, the South supplied \$99,500,000 of \$132,667,955 in 1849, according to one estimate; \$181,801,257 of \$338,985,065 in 1857; \$163,082,965 of \$293,758,279 in 1858, and \$196,801,876 of \$335,894,385 in 1859. Of the exports in that year, \$5,281,091 were classed as exclusively northern, \$57,502,305 as specie, \$84,417,493 as from the North and the South jointly, and \$188,963,496 as exclusively Southern."*

In the production of fermented liquors and distilled spirits the increase has been relatively large. In 1880 the production of distilled spirits amounted to 21,413,237 gallons, and in 1890, 44,276,093 gallons, while of fermented liquors the Southern States, including Missouri, produced in 1880, 1,340,037 barrels, and in 1890 the production was 3,482,869 barrels.

A line of development which indicates the prosperity of a great region as emphatically as does the progress in industrial matters, is that of transportation. The mileage of Southern railroads was increased from 20,612 miles in 1880 to 46,974 in 1894, and the number of passengers carried from 6,395,000 in 1880 to 30,061,000 in 1894. Nothing could display the activity of a people more emphatically than this. The number of passengers carried was increased nearly four-fold, and the amount of freight moved grew from 17,759,441 tons to 61,771,929 tons. The earnings from passenger service were more than doubled,

* "Southern Side Lights," by Edward Ingle.

as were the earnings from freight service, and the total earnings and income of Southern railroads were increased from nearly \$47,000,000 in 1880 to more than \$103,000,000 in 1890. In the first year of the decade there were 37,000 employes engaged in the railroad business of the Southern States, while in 1890 there were nearly 90,000. All this vast increase in the railway service of the Southern States has been due to industrial activity in the truer sense.*

According to an estimate based on the census of 1890 there were about 14,921,122 wage earners in the United States, and of this number 4,015,593, or 27 per cent. were in the Southern States. Of the wage earners in the South, 1,798,237 were engaged in agriculture, fisheries, and mining; 1,092,950 in domestic and personal service; 413,170 in trade and transportation, and 711,236 in the manufacturing and mechanical industries. There was one wage earner in the South to every 1.7 persons engaged in all gainful occupations, and in the States exclusive of the South there was one in every 1.5 persons.

The question may be asked, when all this material progress has been shown (and I regret that I can give you only those things which are indicative, and not all the statistics,) "Is the South really improving in its actual prosperity financially?" The capital invested in the great industries of the South is represented by the banking capital, which in 1880 was \$92,500,000 and in 1890 more than \$171,500,000, an increase of over 85 per cent.; the capital invested in manufacturing establishments of all kinds was advanced from \$179,300,000 in 1880 to \$551,500,000 in 1890, while the total number of hands employed was more than doubled, being 153 per cent. greater in 1890 than in 1880.

While these truths are large and somewhat dazzling, they might not indicate the truth as to the real financial condition of the South; but this can be ascertained by an examination of the statistics of indebtedness. The total indebtedness of the Southern States, including county debts, and less the sinking fund—that is, practically, the net total debt—was, in 1880, \$215,712,241, while in 1890 this indebtedness had been reduced to \$178,162,755. The reduction is best expressed by the figures repre-

*Not all Southern States are included in these statements or statistics for all could not be obtained.

senting per capita indebtedness. In 1880 the total net indebtedness of the Southern States was \$11.20 for every inhabitant; in 1890 it had been reduced so that each person was represented by an indebtedness of \$8.08. This is a most excellent showing, and proves conclusively that the prosperity of the South is not on the surface, but that it is real and that it results in the best material prosperity of the people.

The real value of real and personal property in the South in 1860 was \$6,833,670,687, an increase of 129 per cent. in ten years; and in the North, \$9,325,945,381, an increase of 139 per cent. Holdings of personal property exceeded those of real estate in all the South except in Delaware, Kentucky, Louisiana, Missouri, Tennessee and Virginia, but in only three states of the North. When it is considered that the possession of slaves swelled the value of personal property and the percentage of increase, and that the slave-holding class, who were also large land owners, were but one-fourth of the white population, it will be seen that the greater part of the Southern wealth was held by a comparative few.

The true value of all real and personal property in the Southern States, according to the eleventh census, amounted to \$11,150,532,304. Of this total, real estate and improvements formed \$6,219,245,024. The remaining \$4,931,287,280 represented the value of live stock on farms, farm implements, and machinery; mines and quarries, including product on hand; gold and silver coin and bullion; machinery of mills and product on hand, raw and manufactured; railroads and equipments, including street railroads; telegraphs, telephones, shipping, and canals and equipments, and other miscellaneous property.

The per capita value of real and personal property in the South Atlantic States advanced from \$333 in 1850 to \$579 in 1890, and in the South Central States from \$299 in 1850 to \$569 in 1890.

Turning from the material side, another question may be asked, "Is the South keeping pace in other matters?" Indicative facts in this direction are found in the expenditures for educational purposes. In 1878 the Southern States expended \$8,887,570 for school purposes, including buildings, school expenses, salaries, etc., but not payments of bonded indebted-

ness. In 1888, ten years later, such total expenditure reached \$16,806,668. That the South in educational matters, through her own expenditures for school purposes, is keeping pace relatively with her industrial growth and with that of the whole country is clearly and emphatically shown by these figures. The enrollment in the public schools shows the same general activity in educational work that pervades the South in industrial matters. The percentage of enrollment of the whole population in 1880 was 16.59, and in 1890 it had risen to 20.27; while in the whole United States the percentage of enrollment of the total population was 20.22. The increased enrollment in the Southern States represents both the white and the colored, and in about equal proportions.

I may have wearied you too long with figures, and yet they are more eloquent, when dealing with industrial affairs, than any other form of expression. They give concretely the results of great enterprises, of the movements of thousands of people; they crystalize the moving history of the time, and it is only through them that we can reach positive knowledge as to material affairs. The inventory relating to the present industrial status of the South, as compared with that of fifteen years ago, must give great satisfaction to the people of the South, for the account discloses clearly the actual results of that great alliance of patience and activity which has characterized her history. Yet, my friends, there is another and an anxious side to this whole business, which can not be brought out by any statistical tables, and it is so thoroughly a part of industrial progress that I can not forbear calling your attention to it. It is a side of the industrial movement of the age which belongs to the whole country. The North has seen some of it, the South but little of it.

The broad acres of our country, stretching from ocean to ocean, yet bound by a cord of commerce that has made of oceans near neighbors, and of mountains level plains; all our boundless wealth, the tireless energy of our people, the hunger for progress, and the thirst for knowledge—all these betoken deeper movements than those necessary for the accumulation of wealth, and they appeal to us to pause always when considering material progress to consider the more philosophical and the

psychological elements of industrial conditions. The industrial future of the South is assured, the future situs of the iron industry in America, and it may be that the future situs of the American iron production is in the great Southern field. Some may tell you that the South is suffering from a check in the development of the iron and cotton industries, that the railroad systems of the country have been so fully developed that the demand for the product of your iron mines will decrease henceforth. I can not agree with this view. The railroad systems of the country may not be developed as rapidly during the next ten or fifteen years as they have during the past twenty years, but the materials of the roadways will wear out. Throwing the whole railroad business out of account, except that necessary to keep the systems in proper working order, and then, to my mind, the demand for the products of iron mines must increase. The consumption of structural iron and steel must inevitably increase the demand. For all building purposes the increased use of iron is so great that other than agriculture it must remain the basic industry of this and other countries. The development of rapid transit in our great cities means their tunneling, and the tunneling of great cities means the use of enormous quantities of iron and steel casings. Sanitary conditions everywhere demand the displacement of perishable material by imperishable, and in all the ramifications of the development of building operations, engineering, and all that makes for the progress of our age are found the great use of iron and steel. So the South, having the raw material, the enterprise, the facilities, must be in a position to meet the constantly increasing demand, and she can compete in supplying this demand only by the development of her facilities for reaching markets, and hence the establishment of deep water privileges becomes as essential to her as to the East and the North. These deep water facilities are at hand. Already the steamship lines from Southern ports are demonstrating the ability of the Southern States to transport their productions at low freight rates. Many steamers are now loaded at Mobile for foreign ports and the South is shipping iron in them, while consignments of corn and machinery have been made to the Northwest. We have seen the ability of the New South to manufacture her timber, her ores, and her cotton

into finished goods, and by the extension of her railroad systems to ship them from factories in the interior to outside points. Now she can, with some additional improvements in the Warrior, the Tombigbee, and the Alabama rivers, ship her products to the Gulf coast, whence she can place them in Central and South America and Cuba, and by a network of competitive railroads, thrown over her area from the Atlantic to the Rio Grande, she can command all the deep water facilities essential to her rapid development.* These developments bring the South into the swim of sharp competition and a participation in all that belongs to the great trading interests of the world. The South has, in doing all this, a class of dusky laborers, who flourish on corn-bread and bacon, but who do not strike, and she has, working along with them, skilled laborers who do not flourish on corn-bread and bacon, and who do sometimes strike. Material prosperity brings its troubles, but it develops the higher attributes of human nature.

There is a system or a criticism or a method called "socialism," but socialism is of two kinds, material socialism and philosophical socialism. The basis of the first is hunger, that of the second theoretical dreaming and a real sympathy with the lowly and unsuccessful. The one finds its source in the stomach, the other in the head and heart. These two socialisms work both harm and good, and they both grow out of industrial conditions to a large extent. The African is probably in no sense a factor in creating socialistic views, either from a material or a philosophical standpoint; yet the South has with it the great negro question, which belongs to the whole country in its influence, and which may become one of the objective points of socialism. To the South alone it is a double question—Is there any solution of what is known as the "negro question?" and, Will the development of negro labor lead to the agitations and the troubles which accompany industrial communities in other parts of the world and to socialistic complications? In the first place, to my own mind, there is no forcible solution of the so-called negro question; that is to say, it is absurd to think of colonizing the negro, either at home or abroad, or of disfranchising him. He has been enfranchised, for weal or for woe, and he cannot be dis-

*Cf. John A. Conwell, in *Belford's Monthly* for February, 1892.

franchised. He can not be transported under a colonization system, for his race is too numerous, and, again, it would be against the common instincts of humanity to undertake any such gigantic scheme. He may be educated, but the ordinary philanthropy which seeks his education is based upon a fundamental error. It thinks it can make of the African a Caucasian. It can not. It may be the means of developing the best kind of an African, but it never can develop the African into the Caucasian, any more than the same kind of philanthropy has been able to develop an Indian into a Caucasian. The only true policy is to do the best that can be done in developing the very best negro and the very best Indian out of the present negro and Indian and make of them industrious and intelligent citizens. Education by the book is all very well, but it is not sufficient. What the negro needs is what the Indian needs, and that is to be taught how to do something fairly well. The Federal government will never make the great mistake in relation to the negro that it made in relation to the Indian, that of trying to deal with him through treaties. To my mind, the basis of nearly all the trouble that has ever existed relative to the Indian can be traced to a fundamental error, that of the government making treaty with its own subjects. To colonize the negroes of the South or any portion of them would involve the same illogical proceedings. But the education of the negro along industrial lines—the education of his hand as well as of his mind—can be accomplished in some degree, and as this education is accomplished the negro steps onto a higher plain of living, he outgrows the standard of corn-bread and bacon, he increases his consuming power from less than a dollar per week to that of the Caucasian, which is more properly represented by three dollars per week, and under such education he becomes essentially an economic factor in the adjustment of the conditions of production. The negro question resolves itself into the whole race question for America. The negro can not be assimilated with the white race, as some members of Caucasian nationalities who come to America can be assimilated with others here before them; but in his treatment the question is the same, and that is, how to mould all the different members, differing as to race and nationality, that are found upon American soil, into industrious

and self-supporting American citizens, and from whose independence and capacity there shall come respect and proper standing, and the right and the opportunity to earn in honorable ways a competency.

I believe, therefore, that the whole negro question must be considered along industrial lines, and that by so considering it the solution will grow more apparent, the status of the negro more satisfactory, and the welfare of the community more thoroughly assured. But this leads me to the thought which I indicated, and that is the troubles which always come when the lower strata of society become ambitious to reach a higher plane; discontent always accompanies progress; but such discontent is only another name for ambition, and ambition brings many troubles, and labor troubles among the others.

The American civil war, like nearly every other, was organized for political purposes, but the philosophy of it has taught us that it was in reality a great labor movement.* Divested of all political and sectional significance, the war was one of economic forces, with good or ill results to the industrial elements of the nation, and particularly to the South, for the South had existed under a form of labor entirely antagonistic to that of all lands where material progress has accompanied the growth of peoples. It was an agricultural region, and therefore subjected to the conditions which always accompany a community given to agricultural pursuits. It is simply a matter of history that agricultural sections can not advance with great rapidity, but that in varied industries there is mental activity and mental friction. There is always, under the agricultural regime, the most respectable society, consisting of men who are trained in statecraft in a larger degree, perhaps, than are men who come from communities devoted to mechanical industries; notwithstanding, great development must depend upon varied industry. Under the old regime the South had been waiting, as had the late Count Chambord of France, for the world to turn backward, and to bring with such turn the wealth which can come only from a development of natural resources. All these resources existed in the South, but had not been developed. It is not essential at this

*Many of the thoughts expressed in the next few pages were embodied in an address by the writer, delivered at Winchester, Pa., in September, 1883.

time to discuss fully the reasons why immigration passed by the rich deposits of iron and other ores, and the coal to work the ore; the timber, pasture, and arable lands which existed without stint; the water-powers that might turn the wheels of industry; the climate, charming enough to allure dwellers from inclement zones, and the scenery, as varied and beautiful as can be found in any of the states, and sought the flat, cheerless, shadeless, and oftentimes malarial districts of the West. This did occur, and the fact is sufficient. But there came a change in the form of labor in the way of the emancipation of labor, and with that emancipation there has come industrial competition with the North and with Europe. The buzz of machinery is now familiar to Southern ears, and the whole country is learning again the oft-repeated lesson that no section devoted to one industry can hope for great success, but that in a diversity of employment lies the welfare of the people. The cultivation of the soil, the most attractive branch, it may be, of human industry, honorable and independent in the highest degree, must be allied to the mechanic arts in order to secure the best industrial results. These conditions are coming rapidly in the South, and with their coming there are to be found the industrial difficulties of the present, not as the result alone of their coming, but contemporaneously and as a result of mental activities and frictions; for there is discernable an apparent complication in this, that the labor of the factories of the South is of a primitive kind as yet, and as such its wages are the minimum wages, and this labor must compete with the older and better-paid labor of other sections of the country and of Europe. This variance in the wages paid will not, however, have any lasting, and I trust little, if any, temporary influence upon wages in other parts of the world, for they are now too low, as a rule. As the mechanic arts become extensive in the South, its labor will seek a corresponding elevation in rates, and thus, while the South is now practically free from what are called "labor difficulties," the time will soon come when free labor will demand a greater reward, and this demand will result in so-called labor controversies. Then the wisdom of the employers, and the temper, morality, and intelligence of the employes will be put to a severe test, and the outcome will depend upon the fairness and justice with which the complications are treated.

While slavery is the simplest form of labor, as despotism is the simplest form of government, the moment freedom comes, individual rights become prominent, and social, political, and industrial affairs correspondingly complicated. Strikes, lockouts, and all the apparent evils of the apparent struggle between labor and capital will become familiar in the South, as they have been and are in the North, and with them will come dreams of the peaceful days of slave labor, and then Southern patience will be tried in new directions as severely as it was tried in the years immediately subsequent to the war; but the South knows the cost when differences are brought to the arbitrament of arms, and will know that industrial peace must be preserved in order that the great industrial development of the South may receive no check, no retarding influence. I do not believe that the labor difficulties that hereafter will crop out in the South will be as severe or as irritating as those which have occurred in the North and other parts of the world, for much has been learned, and the men of the South have the advantage of the experience which has come to both labor and capital in the matter of differences. Demagogues often seize upon labor strifes as a pretext to secure power. This action, demoralizing in all respects, is not so potent as it has been; but to secure power or to excite people, we shall be told sometimes that such and such action must be taken to prevent strife. There is probably no war, either industrial or political, in our immediate future. No great political questions agitate our people as they do those of European countries. We have no vital questions before us which mean to us what the vital questions of European politics mean to the peoples of Europe. Our questions, so far as magnitude is concerned, belong to the economic development of the resources of our country. Our future must be a continuance of the contests with nature; the great questions for us to meet grow out of industrial relations and interests, and although politicians may turn first to one side and then the other of the economic forces of the country, the line of march will be quite independent of them, after all. And yet the industrial problems of our future may well excite the anxiety of conservative minds, for upon their treatment depends the peace of the country, to some extent, and, maybe, of the

industrial world. So our very best services must be called to the social and economic contests of our epoch.

We need and we have the men able to project and carry to success great industrial and commercial enterprises that would have staggered the great statesmen of the past. These men exhibit a capacity for the organization of varied forces which commands our enthusiastic admiration, for the genius they display finds no equal in past enterprises. To such men the business of government would be mere child's play. So while at present we demand fidelity and good ability in our governmental places, we must have commanding genius in the leaders of industry. These leaders are teaching the world that America holds the key to future industrial supremacy among nations, so far, at least, as material development is concerned, and this material development, as I have already said, is creating an aristocracy here in whose ranks the proudest may march—the aristocracy of brains. It is this new aristocracy that is rapidly supplanting the old in England. In America this great development gives us occasionally colossal wealth held by an individual, but such wealth is mere dross without a moral community, for whose benefit the millions must really be invested. Fortunes belong to men, but the principles of their value are of God. There is no return for inactive capital, and mere money is nothing to its owner without activity. It is against the bad use of great fortunes men have a right to enter their protest. When used in fostering the grand projects of peace, in the establishment of institutions of learning, in carrying on the work of intercommunication, in opening new lines of industry—all such employments of wealth call for the very best genius of our land, and in these lines of work are to be found the men who, in great national extremities, will step to the front as statesmen, and these men are gradually coming to the conviction that moral forces should be recognized in the conduct of industrial affairs, that property has no value except when surrounded by a moral and industrious people, and that a well-paid and reasonably-contented workman is worth more, not only to industry, but to himself and his community, than one unhappy and poorly-paid, and that the best paid labor is the cheapest in every economic sense. It is when these principles are reversed that labor troubles occur

and that iconoclastic socialism finds increased strength among the workers of society. The growth of the sentiment I have indicated belongs more thoroughly to the present than to any preceding age, and will overcome the labor difficulties which harass the public, injure the workman, and damage capital. With the ethical spirit finding a lodgment in our old industrial communities, the newer ones must come under its influence; so the labor troubles of the South will have less of the antagonisms and the animosities shown in those of the North. I beg of you to take no stock in any cry of a labor war, but quietly exert all your influence in the interest of all movements which tend not only to elevate labor but to teach the employers of labor the necessity of their recognizing the utter worthlessness of capital until intelligent labor vitalizes the machinery it sets in motion.

I think we shall all agree that the wage system of labor is an improvement upon the slave system which the war set aside; certainly our prosperity must be secured under it for the present; but if it must give way, as it will some time, in order that the profits of production shall be more equally and justly shared between the two vital elements of all industry, labor and capital, I believe that the aristocracy of brains of which I have spoken, made up from the best minds of the two elements, will solve the question whenever it must be solved. It can not be solved now, for the very conditions which make the system of competition a necessity prevent its solution. I mean conditions of ignorance. The wage system, which now exists in all parts of our land, must hold sway until the leaders of industry and of labor are ready to work on the basis of the Golden Rule; that is, when capital is ready to associate itself with labor, not as its controller, but as its fellow, and when labor is intelligent enough to accept the fellowship. In every instance where this principle has been adopted in industrial establishments, and the instances are by no means rare, the solution of the labor problem has been met partially, at least, and the moral, sanitary, and intellectual conditions of the wage-workers vastly improve. The magical industrial developments of the present time are bringing all these questions more clearly to the minds of men, and as they become clearer our material prosperity will be augmented. These economic and social contests of the present may lead many to fear

the advance of socialism, and lead others to hope for socialistic revolutions which will seek to remedy the social and industrial troubles of the day by tearing down old structures to the very foundation and building anew, instead of utilizing the existing structures in the work of progress. Here is an apparent contest for our near future. North and South the men who believe in demolishing the present structures and laying new foundations tell us that society is on the verge of destruction, and that it can be saved only by an entirely new industrial system. Well, my friends, society has always been on the verge of destruction. Socialism tells us nothing new in this direction, and only echoes old fears. But need we fear socialism—have we been touched by it? Socialism is a growing power in the world—not the iconoclastic socialism of the socialistic party, but the pure socialism which is molded and guided by wisdom, experience, and justice. This kind of socialism is a growing power because it has won partially in every revolution which has been waged for the rights of man. Our own Revolution was a war out of which grew the socialistic Declaration of Independence. It was one of those revolutions described by Emerson which “are read with passionate interest,” and which “never lose their pathos by time,”—revolutions “when the cannon is aimed by ideas, when men with religious convictions are behind it, when men die for what they live for, and the mainspring that works daily, urges them to hazard all.” Every advance made by the country since that compact has been socialistic. The civil war resulted in giving the suffrage to millions of bondsmen, one of the most socialistic revolutions the world ever saw or socialists ever dreamed of; but all these movements have been in the interest of humanity, not to found a socialistic state—not iconoclastic endeavors to rid the world of evils—but the natural outgrowth of increased wisdom. In the growth of such socialism there is no danger, and under our institutions there is no room for any other. The communistic distribution of property would be a retrogression to the infancy of tribes. This is an impossibility. The only communism needed is that which increases the opportunities for securing property, for in the idea of property is the fountain head of our civilization; with and for its growth all our institutions of government have been framed; the comity of nations,

which is the welfare of the world, take it for the basis of rule and action, and it is to its sacredness and to the inviolability of its rights we look for the further and continued progress of mankind. Certainly this is true of the American States, for the constant influx of strangers who come from less favored lands to better their own condition would soon put us at a disadvantage here were it not for the facilities offered by our laws and customs for acquiring property in land. Ownership of a bit of land makes the owner a law-and-order man. Herein is our safety against iconoclastic socialism; and herein lies the solution, to a large degree, of the negro labor question of the South. Industrial education and ownership of land will secure industrial peace in the South, and freedom from iconoclastic socialism. With education and ownership, we need not fear socialism nor anarchism, because the disciples of these two systems of philosophies, which are absolutely and diametrically antagonistic, constitute but a fringe of the body politic, and for either to make any headway it must convert the other, and the two then combine in converting the majority of the body politic.* As there is more religion in the world than of old, with perhaps less talk about it, there is more practice, more service to humanity, and less selfishness. This direction of affairs, altruistic in its nature, renders socialism harmless and makes it impossible for any but the right kind to enter into the economic contests of this country. Industrial progress kills destructive socialism and aids and furthers constructive socialism.

Another question is sometimes raised when the industrial progress of the South is being considered, and that is whether with Southern development there will not come some loss in the industries of other sections of the country. I have no sympathy with such a query, for while there may be a change in the character of industries as the result of the development, the permanent relations of different sections upon a basis of mutual interest will be founded, for the welfare of one must be the welfare of the other. The North is already losing some of its coarser productions, or rather they are being transferred to Southern States; but the North is taking pains to replace such industries with other grades and other lines, and as the consuming power of

*Rev. Minot J. Savage.

Southern labor increases and comes nearer to that of the Northern workers, the consumption of the products of the Northern mills and establishments increases, not only proportionately, but comparatively, in a greater degree than the relative increase of product in the South. As the consuming power of the common laborer in the Southern States is enhanced, the products of all parts of the country find a readier market. When the wants of the Southern laborer increase, through the increased standard of his living, he will need all that surrounds the Northern laborer; he will transfer his living from a log cabin to a frame house, he will carpet his house, he will furnish it on a scale commensurate with his changed condition, he will replace his corn-bread and bacon with finer food, and with an increased variety in his dietary. So, as he steps onto the plane of the English and the American workingmen, the Southern negro laborer will call for the things which the English and the American workingmen find essential to their comfort, convenience, and happiness.

Happily the Constitution of the United States forbade restrictions on the commerce between the States; so whatever may be the merits or demerits of the doctrine of protection, the great imperial trade of the United States is free, and as each section prospers all share the results. This should stimulate producers to aid in every way in their power to bring the producing and consuming power of the South up to the standard of its competitors. The United States can not afford to have any section lag behind, either in industrial or educational enterprise, and the fact that every part and section of the country is putting forth its best efforts to secure to itself the results of its own resources leads to the most gratifying conclusions as to the future prosperity of the country as a whole. Political asperities, sectional prejudices, race jealousies, must all give place to industrial and social progress.

So, I would say to the men of the South: The outlook for the future demands that you push on, traveling along the lines now being traveled, absorbing capital from whatever source it comes, and putting the courage and the persistency with which a non-industrial community for four years fought against an industrial community into the development of the New South.

You can take no step backward; you must push on under the new order of things. Make your country rich; make the labor that makes the country rich happy; meet the irritating difficulties as they come, in a spirit of justice and of kindness, and you will make the richest portions of the inheritance of our fathers the wonder of the world.

LABOR LAWS OF MAINE

LABOR LAWS OF MAINE.

ACT ESTABLISHING THE BUREAU OF INDUSTRIAL AND LABOR STATISTICS, AS AMENDED.

Sect. 1. There is hereby established a separate and distinct department, which shall be called the Bureau of Industrial and Labor Statistics.

Sect. 2. It shall be the duty of this department to collect, assort, systematize, and present in annual reports to the Governor, to be by him transmitted biennially to the Legislature statistical details, relating to all departments of labor in the State, especially in its relations to the commercial, industrial, social, educational and sanitary condition of the laboring people; and to the permanent prosperity of the productive industries of the State, and also to inquire into the immediate cause of strikes, lockouts or other disturbances of the relations between employers and employes.

Sect. 3. The governor shall, with the advice and consent of the council, appoint immediately after this act goes into effect, and thereafter biennially, on the first Wednesday in February, some suitable person, who is identified with the industrial and labor interests, and who shall be designated commissioner of industrial and labor statistics, with an office in such place as shall be designated by the governor.

Sect. 4. The commissioner herein named, shall receive an annual salary of fifteen hundred dollars, and to aid in carrying out the provisions of this act, said commissioner is hereby authorized to employ such assistance and incur such expense, not exceeding two thousand dollars per annum, as shall be necessary to carry out the provisions of this act.

Sect. 5. The commissioner shall have power to take and preserve evidence, examine witnesses under oath, and administer the same and in discharge of his duty, may enter any public institution of the state, and at reasonable hours when open for business, any factory, workshop, mine or other place where labor may be employed.

Sect. 6. All state, county, city and town officers, are hereby directed to furnish to said commissioner upon his request, all statistical information in reference to labor and labor industries, which shall be in their possession as such officers and said commissioner shall cause to be published and circulated in this state six thousand copies annually of the results of its labors, as to the objects for which commission is created.

Sect. 7. There is hereby appropriated out of any money remaining in the state treasury the sum of seven thousand dollars for the ensuing two years for the purpose of carrying out the provisions of this act; the commissioner herein named shall receive his salary in quarterly installments, and the expenses of the bureau shall be paid on the vouchers presented by the commissioner, after the same shall have been audited and approved by the governor and council.

AN ACT TO REGULATE THE HOURS OF LABOR AND
THE EMPLOYMENT OF WOMEN AND CHILDREN.

Sect. 1. 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 this 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, 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 per 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 first be obtained.

Sect. 2. 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 deputy commissioner of labor hereafter named, 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 section one, 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.

Sect. 3. Whoever, either for himself, or as superintendent, overseer, or agent for another, employs or has in his employment any person in violation of the provisions of section one, 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 dollars 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 one. Whosoever falsely makes and utters such a certificate with an intention to evade the provisions of this act shall be subject to a fine of one hundred dollars.

Sect. 4. It shall be lawful for any person, firm or corporation engaged in any manufacturing or mechanical business to contract with adult or minor employes to give one week's notice of intention on such employe'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 employe; and on failure shall pay to such employe a sum equal to one week's wages. No such forfeiture shall be enforced when the leaving or discharge of the employe is for a reasonable cause. Provided, however, the enforcement of the penalty aforesaid shall not prevent either party from recovering damages for a breach of the contract of hire.

Sect. 5. No child under twelve years of age shall be employed in any manufacturing or mechanical establishment in this 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.

Sect. 6. No child under fifteen years of age shall be employed in any manufacturing or mechanical establishment in this State except during vacations of the public schools in the city or town in which he resides, unless, during the year next preceding the time of such employment he has for at least sixteen weeks attended some public or private school, eight weeks of which shall be continuous; nor shall such employment continue unless such child in each and every year attends some public or private school for at least sixteen weeks, and no child shall be so employed who does not present a certificate made under or by the direction of the school committee, superintendent of the public schools, or the teacher of a private school, that such child has so attended school. And it shall be the duty of such committee, superintendent or teacher to furnish such a certificate in accordance with the fact, upon request and without charge. Provided, that this section shall not take effect until January one, eighteen hundred and eighty-eight.

Sect. 7. Any parent or guardian who procures a child to be employed contrary to section six, 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. It shall be the duties of the school committees and superintendent of public schools to inquire into violations of said section, and report the same to the county attorney, who shall prosecute therefor.

Sect. 8. 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, which certificate shall also state in the case of a child under fifteen years of age the amount of his school attendance during the year next preceding such employment. 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 schools, and shall be approved by the attorney general. The deputy commissioner of labor hereinafter named, or either of his assistants, may demand the names of the children under sixteen years employed in such establishment, in the several cities and towns of the State, and may require that the certificates of age and school attendance 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.

Sect. 9. The governor, by and with the advise and consent of the council, shall appoint a deputy commissioner of labor, at a salary of one thousand dollars a year, who shall hold office for two years, or until his successor is appointed, unless sooner removed. It shall be the duty of the deputy commissioner of labor to inquire into any violations of this act, and also to assist in the collection of statistics and other information which may be required for the use of the bureau of industrial and labor statistics; and said deputy commissioner, shall, in addition to his salary provided by law, be allowed his reasonable expenses. Whenever the governor of this state shall be satisfied the deputy commissioner of labor cannot perform all the duties of his said office required by this section, in person, he shall, with the advice and consent of the council, appoint a sufficient number of assistant deputies to assist him in so doing. Said assistants

shall hold their office for the term of two years, and act under the direction of said deputy commissioner of labor, and shall receive the sum of two dollars per day and reasonable expenses while actually engaged in duty. Said assistants may, at any time, be removed for cause by the governor. All bills for the expenses of the deputy commissioner of labor, and for the services and expenses of such assistant deputies, shall be audited by the council. For the purpose of inquiring into any violation of the provisions of this act, and enforcing the penalties thereof, such deputy commissioner and assistants may, at all reasonable times, enter any manufacturing or mechanical establishment 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 deputy commissioner or his assistants in the performance of their duties as prescribed in this act shall be fined fifty dollars.

Sect. 10. Nothing in this act shall apply to any manufacturing establishment or business, the materials and product of which are perishable, and require immediate labor thereon to prevent decay thereof or damage thereto.

AN ACT TO CHANGE THE OFFICIAL TITLE OF THE
DEPUTY COMMISSIONER OF LABOR.

Sect. 1. The official title of the officer now known as the deputy commissioner of labor is hereby changed to inspector of factories, workshops, mines and quarries.

Sect. 2. Chapter one hundred and thirty-nine of the public laws of eighteen hundred eighty-seven, is hereby amended by striking out the words, "deputy commissioner of labor," wherever they occur in said chapter, and inserting in their place the word "inspector of factories, workshops, mines and quarries."

AN ACT TO PROVIDE FOR THE FORTNIGHTLY PAYMENT OF WAGES.

Sect. 1. Every manufacturing, mining, quarrying, stone-cutting, mercantile, horse railroad, telegraph, telephone and municipal corporation, and every incorporated express and water company, 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 employe engaged in its business, the wages earned by such employe to within eight days of the date of said payment; provided, however, that if at any time of payment, any employe shall be absent from his regular place of labor, he shall be entitled to said payment at any time thereafter on demand.

Sect. 2. Any corporation violating any of the provisions of this act, shall be punished by a fine not less than ten nor more than twenty-five dollars on each complaint under which it is convicted, provided, complaint for such violation is made within thirty days from the date thereof.

Sect. 3. When a corporation against which a complaint is made under this act, 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.

Sect. 4. 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.

Sect. 5. The provisions of this act shall not apply to municipal officers whose services are paid for by the day, or to teachers employed by municipal corporations.

Sect. 6. This act shall take effect May one, eighteen hundred and eighty-seven.

AN ACT AUTHORIZING AND REQUIRING THE INSPECTOR OF FACTORIES, WORKSHOPS, MINES AND QUARRIES TO ENFORCE THE LAWS RELATING TO FORTNIGHTLY PAYMENTS; SANITARY CONDITIONS OF FACTORIES, AND TO REQUIRE HIM TO REPORT ANNUALLY.

Sect. 1. It shall be the duty of the inspector of factories, workshops, mines and quarries, upon complaint, to inquire into, and prosecute for, any violations of chapter one hundred and thirty-four of the public laws of eighteen hundred and eighty-seven.

Sect. 2. It shall be the duty of the inspector of factories, workshops, mines and quarries to 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 employes he shall notify the local board of health, and it shall be the duty of said board to investigate the matter.

Sect. 3. It shall be the duty of the inspector of factories, workshops, mines and quarries to enforce the due observance of sections twenty-five and twenty-six of chapter twenty-six of the revised statutes, relating to the swinging of doors in all factories and workshops.

Sect. 4. The inspector of factories, workshops, mines and quarries shall, on or before the first day of December annually, submit his report to the commissioner of industrial and labor statistics which shall be incorporated in, and printed with the annual report of the bureau of industrial and labor statistics.

Sect. 5. All acts and parts of acts inconsistent herewith, are hereby repealed.

Sect. 6. This act shall take effect when approved.

AN ACT RELATING TO EMPLOYMENT OF LABOR, AS
AMENDED IN 1891.

Any employer, employe, or other person, who by threats of injury, intimidation or force, alone or in combination with others, prevents any person from entering into, continuing in or leaving the employment of any person, firm or corporation, shall be punished by imprisonment not more than two years, or by fine not exceeding five hundred dollars.

LABOR'S HOLIDAY.

The first Monday in September of each year, being the day celebrated and known as labor's holiday, is hereby made a legal public holiday, to all intents and purposes, in the same manner as Thanksgiving, Fast and Christmas days, the twenty-second day of February, the thirtieth day of May and the fourth day of July, are now by law made public holidays.

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, 1897.

To Hon. Samuel W. Matthews, Commissioner of Industrial and
Labor Statistics:

In compliance with the requirements of an act of the legislature, approved March 29, 1893, 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 first annual report.

Very respectfully,

CHARLES E. ATWOOD,
Inspector.

REPORT.

The duties of inspector, as designated and regulated by acts of the Legislature, are, to report upon the hours of labor and the employment of women and children in manufacturing and mechanical establishments; to examine into the sanitary condition of factories, workshops, mines and quarries, and to enforce the due observance of sections twenty-five and twenty-six of chapter twenty-six of the revised statutes relating to the swinging of doors in factories and workshops.

The inspector has endeavored to fulfill all the legislative requirements of his office. He has twice, and in many instances, three times, visited all the cotton mills in the State. He has answered every appeal to him, and every query propounded by those interested, in all the woolen mills, mines and quarries, within the boundaries of Maine. He has endeavored to acquaint himself thoroughly with the duties of his office, to become familiar with the mutual relationship existing between employer and employed, and to learn of the condition and prospects of the several industries, so far as these conditions might have a bearing on the well being of the workmen, throughout the State.

While there can be no doubt that in most lines of industry in the State a much better condition exists than for several years past, and in some lines the improvement has been very marked, yet it is to be regretted that the cotton industry is still in a very unsatisfactory condition, and the outlook, to say the least, not promising for the immediate future. Two prominent causes may be assigned for the depressed condition of this leading industry of our State, a depression which seems to affect all New England as well. The tendency of the cotton producing states in the South has been of late, to produce crops of cotton far in

excess of the needs of the mills of the country after satisfying the demand for export, and this surplus, in the hands of producers who are not able to hold it, has been thrown upon the market and sold for what it would bring, and thus the price of raw cotton has been forced down to a point where it is hardly profitable to produce it. The decline in price during the last year has been rapid, so the large stocks of manufactured goods now on hand have been produced at a cost far in excess of what the same goods could now be manufactured for with raw cotton at the present price and with the prospect of a still further decline. This, of course, has demoralized the market for cotton goods and forced the price downward, for buyers will not invest largely in any class of goods on a falling market. Thus the manufacturers are left with a large stock on hand which can be disposed of only at a loss; and in order to partly make good this loss and tide them over to such times as the business resumes a basis which guarantees a profit, there is even now a strong probability of a reduction of wages in some of our sister New England states. Should this reduction be made, whether it would extend to Maine, or what the result might be, can only be conjectured, but it is more than probable that if New Bedford and Fall River should start the reduction, it would extend all over New England and produce more or less of disturbance among operatives.

Another element entering into the situation, is the immense increase in the manufacture of cotton goods in the Southern states in very recent years. Hundreds of these mills have been erected in the cotton belt, and, although not so large, as a rule, as our New England mills, yet their great number adds many millions of yards of manufactured goods to the product of the country, which, in the aggregate, may exceed the normal demand. With the cost of transportation reduced to a minimum, with lower rates of wages than in the North, and with no limit by law to the hours of labor, it is very evident that the same class of goods can be manufactured in the South at a less cost per yard than in the North. Until these differences can be adjusted on an equitable basis, and a somewhat stable price for raw cotton arrived at, it would seem that the cotton industry must remain in an unsatisfactory condition in our State. In an

industry that gives employment to some 14,000 hands, nearly one-fifth of the employes of all the manufacturing industries of our State combined, it is a matter of regret that the outlook shows no bright prospect. Any condition which affects unfavorably this army of workers not only is a damage to the individual workers themselves but to the communities in which they live as well, and, to a greater or less extent, the State at large.

One gratifying fact noted by the inspector is the tendency of the managers of our cotton mills to employ less of child labor than in former years. According to the report of this department for the year 1895, there were then employed 906 children under sixteen years old, 437 of whom were under fifteen. The present year but 561 children under sixteen years have been so employed, 230 of whom were under fifteen years of age. This is a tendency in the right direction, for, at best, this class of help, as a rule, get but a limited education, and certainly every advantage provided by law should be given them in the matter of attending school. Of all the children working in these mills, none were found without a proper certificate where it was required by law.

In turning from the unfavorable condition of the cotton industry, it is a pleasure to note the greatly improved condition among the woolen mills. For several years past this industry has been very much depressed. Many of the mills had been running on short hours or were shut down for several months at a time. Wages had very generally been reduced. Wool was low, and the market for manufactured goods demoralized. But within the year there has been a decided change for the better. The mills seem to have plenty of orders on hand and some are obliged to supplement their day's work with extra hours, in order that they may fill them promptly, and the prospect for constant employment is most favorable. A good proportion of the mills in this industry have either already advanced the wages of their workmen or have made proposition to do so.

Other lines of industry show more or less of improvement during the year, yet, in some, the effect of the hard times still exists, and delays in the payment of wages are still sources of annoyance in some localities. However, these delays are

growing less frequent. Taken as a whole, outside of the cotton industry, the condition and outlook of the manufacturing industries of Maine show a decided improvement over the last three or four years.

The inspector is pleased to be able to report that no strike or other disturbance of a serious nature has occurred among the workmen in any of the industries of the State during the year. This is a matter for congratulation. Nothing so disturbs the harmony of relationship between employer and employed as a concerted uprising of labor. Suffering, anxiety and feverish unrest follow. Sometimes a decade of years cannot atone for the mischief of a single strike.

It is with satisfaction that the inspector notes the elevated standard of labor among all classes employed as workmen and mechanics in our State. Employers of labor have a positive conviction that educated help is the best help that can be procured under all circumstances, and they are in harmony with the inspector and the other officials of the law to see that the State's legislative enactments are strictly obeyed. As a result of this feeling the inspector reports the fact that very few children in any of our manufactories and workshops have been employed contrary to law. A smaller number of minors are found to be employed than in former years, and the percentage of women and children who are forced to labor in these establishments is very much smaller than has been reported in any previous official paper. Where business is most thriving, that is in the woolen industry, the percentage of women and children is much smaller than in the cotton industry, and there are literally no children employed in any of the mines or quarries of the State.

The inspector congratulates himself upon the mutual good feeling which exists between himself, in his official capacity, and the employes of the different industrial occupations of the State. Everywhere he went there was the most open and frank welcome extended to him.

In conclusion, he begs to acknowledge his thanks to the superintendents and agents of the different mills, workshops, mines and quarries of the State, for the uniform kindness and attention bestowed upon him as he has traveled his accustomed round of duties.

SCHEDULE OF THE COTTON, WOOLEN AND
WORSTED MANUFACTORIES OF THE STATE.

Showing the comparative number of children employed in
1897 and 1895.

COTTON MILLS.

Name of Corporation.	Location.	CHILDREN EMPLOYED.					
		1897.			1895.		
		Under 16 years.	Between 15 and 16 years.	Under 15 years.	Under 16 years.	Between 15 and 16 years.	Under 15 years.
Androscoggin Mills	Lewiston.. .	35	21	14	32	14	18
Avon Manufacturing Company.	Lewiston.....	-	-	-	-	-	-
Bates Manufacturing Company.	Lewiston.....	75	39	36	62	29	33
Continental Mills	Lewiston.....	53	35	18	70	50	20
Hill Manufacturing Company ..	Lewiston.....	32	25	7	31	15	16
Lewiston Bleachery	Lewiston.....	-	-	-	28	13	15
Barker Mill.....	Auburn	9	6	3	29	14	15
Cabot Manufacturing Company	Brunswick ...	88	57	31	104	35	69
Lockwood Company	Waterville ...	91	39	52	135	90	45
Edwards Manufacturing Co.....	Augusta	10	8	2	74	45	29
Farwell Mills.....	Lisbon	27	16	11	37	16	21
Laconia Company	Biddeford ...	36	20	16	64	32	32
Pepperell Manufacturing Co....	Biddeford ...	41	30	11	129	67	62
Springvale Cotton Mills	Springvale ...	8	6	2	43	31	12
York Manufacturing Company.	Saco	56	29	27	68	18	50
Total .....	.....	561	331	230	906	469	437

WOOLEN AND WORSTED MILLS.

Name of Corporation.	Location.	CHILDREN EMPLOYED.					
		1897.			1895.		
		Under 16 years.	Between 15 and 16 years.	Under 15 years.	Under 16 years.	Between 15 and 16 years.	Under 15 years.
Brown Manufacturing Company	Foxcroft	-	-	-	-	-	-
Knox Woolen Company	Camden	-	-	-	-	-	-
Columbia Woolen Mills	Lewiston.....	-	-	-	4	4	-
R. D. Campbell & Company.....	Sangerville ..	-	-	-	-	-	-
Carleton Mills.....	Sangerville ..	-	-	-	-	-	-
Farnsworth & Company	Lisbon.....	-	-	-	4	3	1
Forest Mills Company.....	Bridgton	-	-	-	22	18	4
Goodall Worsted Company	Sanford.....	69	47	22	No report.		
Indian Spring Woolen Company	Madison	-	-	-	3	-	3
Madison Woolen Company.....	Madison	-	-	-	4	4	-
Mt. Battie Manufacturing Co ...	Camden	-	-	-	2	2	-
Camden Woolen Company.....	Camden	-	-	-	2	-	2
Megunticook Woolen Company.	Camden	-	-	-	-	-	-
Mayo & Son.....	Foxcroft.....	-	-	-	-	-	-
Old Town Woolen Company ...	Old Town	-	-	-	-	-	-
Pondicherry Company	Bridgton	-	-	-	4	2	2
Piscataquis Woolen Company..	Guilford	-	-	-	-	-	-
Pioneer Woolen Company	Pittsfield	-	-	-	3	1	2
Sanford Mills.....	Sanford.....	44	30	14	No report.		
Waverly Woolen Company	Pittsfield	-	-	-	3	-	3
Walker Manufacturing Co.....	Pittsfield	-	-	-	2	1	1
Total		113	77	36	53	35	13

At the Eleventh Annual Convention of the International Association of Factory Inspectors held at Detroit, Michigan, August 31st, and September 1st and 2d, 1897, the following paper, prepared by Miss Florence Kelley, ex-Chief Factory Inspector of Illinois, who was unavoidably absent, was read by Mrs. F. S. Greene of Chicago. It contains so many good points, and explains so clearly the workings of the child-labor law in that State, that it is well worthy of a careful perusal by all who have an interest in the wellbeing of the children of our wage workers.

EVOLUTION OF THE ILLINOIS CHILD LABOR LAW.

The following details concerning the present status of the Illinois child labor law, and our experience in enforcing it, are submitted in the hope that they may contribute towards a renewed effort in the direction of uniformity on the plane of the most enlightened measure yet obtained in the different states.

After years of ceaseless agitation of the subject, Illinois at last takes rank among the states in which the lowest limit of the legal age of work is 14 years; not for manufacture alone, but for commercial occupations as well.

As it stands to-day, after many changes and improvements, the child labor law of Illinois prohibits absolutely the employment of any child, under the age of 14 years, for wages in any manufacturing establishment, factory or workshop, mercantile institution, store, office or laundry. Inspectors are clothed with no authority to exempt any child from this absolute rule, and the poverty or orphanhood of the children can no longer be cited to cloak the exploitation of young children in department stores or in the telegraph and messenger service. This was done up to July 1st of the present year, under the old compulsory education law, which authorized local school authorities to issue permits to children ten years of age and upwards. These permits were not required to be sworn statements of the parent or guardian, as are the affidavits; they were granted upon the mere assertion of the parent that the child was ten years old or older, and the greater the apparent wretchedness of the child, the more readily the permit was obtained.

After the enactment of the factory law of 1893, these permits were issued by the local school boards only to children seeking work in places other than factories and workshops. But the children and employers, too, were confused by the varying requirements; and we frequently found children equipped with these permits working in garment and cigar shops under the legal age for employment in manufacture. The abolition of the permit system marks a long step forward in the care of working class children in Illinois.

Since the extension of the provision of the factory law to children employed in mercantile institutions, stores, offices and laundries, by the passage of the new child-labor law, we have found, in our inspections of such establishments, about 20,000 children between 14 and 16 years of age who had previously been exempt. These children have been found chiefly in one ward of Chicago, and employed by less than a dozen corporations. The single errand boy or store boy in retail trade forms but a trifling total after two months search. But the telegraph and messenger boys employed by the three great companies, number several hundred boys; while in five department stores there are more children under 16 years of age than fill the largest high school in the State. There are more than 1,200 boys and girls between 14 and 16 years in these five establishments, one of them being the largest employer of children in the State, with 461 affidavits on file.

The result of the extension is far from sensational; we have been slow to prosecute, and have avoided making known in the papers the convictions which we have obtained. We have now in the office evidence upon which to convict four out of five of the managers of these stores, of whom one has already pleaded guilty in three cases. The others will doubtless follow his example, as their wish is to avoid fostering the hostility to department stores so carefully kept alive by the retail dealers, whose stock argument for legislation against the department stores is the excessive employment of young children in them.

There is reason to suppose that the persistent enforcement of the requirement that affidavits must be filed before the children are set at work, and records and registers kept daily revised, will have the same gradually reductive effect in commercial

establishments which has already been observed in the manufacturing industries, in which there has been a steady though slow improvement in the stature and physique of the children found at work.

No law-abiding employer now sets at work a boy or girl under the age of 16 years unless there has been first an affidavit made by the parent or guardian, an entry of the name, age and address of the child in a register kept for the purpose; and another entry in a list posted on the wall of the room in which the child works. Affidavits are furnished free of charge by notaries in the inspector's office in Chicago for all children applying there accompanied by parent who testifies that the child is fourteen years old or older, stating the year, month and day, as well as the birthplace. Since, however, the inspectors are not required by law to furnish these free affidavits, we have made, for our office, the rule that we refuse to take affidavit of any parent for any child under the average weight of school children fourteen years of age, which is eighty pounds. Also we require that children shall be able to read and write simple sentences in the English language; although the law makes neither of these requirements. We were driven to take these precautions because the office is in the midst of the poorest immigrant colonies in the city; and children were brought to us who seemed to be not more than ten years of age, yet whose parents were ready to swear whatever might be needful in order to obtain the affidavit. We hope that, in the course of a few years, the law may require for all the children the same minimum weight and educational requirements which we now demand for those for whom we make gratuitous affidavits. Public opinion distinctly sustains this rule.

The most marked new departure in the new law after the extension of the factory provisions to the mercantile children, is the prohibition of the employment of children under sixteen years of age in extra-hazardous occupations. This provision we have not yet tested in court. We construe the words "extra-hazardous occupation" to mean any occupation in which the insurance companies are loath to insure working men. To begin with, there are the woodworking machines, which seem all to come under one head. The employment of children in

the manufacture of explosives has gone on, unchecked until now. This we can certainly stop outright. There is no tale more hideous in the history of manufacture than that of the little lad who was turned out of a fire-works factory by Deputy Inspector Jensen because he was under the legal age for work, and, having waited for his fourteenth birthday to come, went to work at once, in the same place, only to blow up the works, killing his sister and himself. Such a horror need never again disgrace Illinois.

The laundries, too, now come under the law for the first time. In their case, however, only the initial step has been taken; for we are still powerless to guard the machine, or to order the premises ventilated. While children under sixteen years of age can no longer be legally employed at dangerous ironing machines, there remains the danger of prostration by heat. But we cannot yet order cool rooms heated, nor hot rooms cooled, nor damp rooms dried. The long, slow hazard of consumption, the enervation from protracted overexertion, these we cannot yet deal with. We are still at the stage in which there must be a conspicuous, sensational damage, visible to the naked eye of the casual observer, before we can get further measures enacted, or existing measures sustained by our supreme court.

The restrictions by the new law of the work of children under sixteen years of age to ten hours a day, is the first step towards retrieving the damage inflicted upon the workers when the eight-hours law was pronounced unconstitutional. Although this new provision sets no limit to the night work of children, it does provide that their hours of work shall not exceed ten in twenty-four, nor sixty in one week. Even this is a vast gain in a city where little girls of twelve have been required at the Christmas season to work from 7.30 in the morning to midnight; and where the candy factories have habitually worked until nine in preparation for the same festival season. The enforcement of the ten-hours day would, of course, involve extraordinary difficulties in sweat shops, but it is a step in the right direction.

The experience of this our fifth year of work confirms the conviction that a factory law is not enforced at all which is not

enforced by the constant help of the court. Not because public opinion is hostile to this law, and contumacy has to be overcome. Far from it; there was never a time when the child-labor law was so popular with the press, pulpit and people; so well regarded by the best employers as it is at present. But the vice of our American citizenship is negligence; good-natured, well-meaning negligence. In Illinois for many years, this negligence has been fostered by a prevailing policy of enforcing nothing, except what was popular, or was thought likely to be popular; until now our negligent disregard of law and ordinance is the standing wonder of travelers from countries which have the good fortune to enjoy the benefits of good local self-government.

Since the supreme court of Illinois annulled the eight-hours law, there has been no real contumacy, no defiance or hostility to the child-labor provisions. But that negligence which is our characteristic quality, which means well but fails to comply, is everywhere; until the department convinces the management that millionaire and sweater, personal friend, relative, alderman, legislator and total stranger, all fare alike, and pay costs, or fine and costs, before the justice of the peace for every violation of which evidence can be obtained. Happily, the fines collected go to the county school fund; and there is, therefore, no possibility of any charge of sordid motive, or corrupt intent in the insistence upon bringing the suits to completion, even where there has been a tardy compliance before the suit reaches trial.

Public opinion sustains the literal fulfillment of that section of the statute which requires the prosecution of all violations. It was found that local justices inclined to leniency, if suit was brought upon a first inspection. We have, therefore, in visiting an establishment now for the first time subject to the law, given twenty-four or forty-eight hours notice, and if all the wall records and register were not in order at the end of that time, as well as the affidavits, suit has been brought. The uniformity of this procedure depends, of course, upon the skill and conscientiousness of the deputy inspector, and this naturally varies somewhat. That the work of the staff, as a whole, has hitherto been efficient, is shown by the fact that about 200

employers have paid costs, or fines and costs, during the first eight months of the present year, for some 350 violations of the various provisions of the statute.

A small fine, uniformly enforced, seems to be the best means of reducing the violations; and it is, perhaps, not an improvement that the lowest fine has been raised from \$3 to \$10. In many cases, the annoyance of arrest and giving bond under a quasi-criminal charge is far more severe punishment than the payment of the fine, though it is surprising to see how eagerly rich employers plead for the remission of the fines of \$3 and \$10.

Desirable as is uniformity in legislation, uniformity in enforcement is even more vital. One of the greatest obstacles to the enforcement of the fourteen-years limit in the glass works in Illinois, is the plea urged by all the corporations engaged in that branch of manufacture that their competitors in other states are allowed to employ boys of any age. This is most demoralizing of all when the corporation has branches in different states, in which the provisions are different, or differently enforced.

The child-labor law is supplemented by two measures of enormous importance to working children, both enacted by the last legislature; namely, one requiring the placing of blowers upon metal polishing machines, and another requiring that fire-escapes must be provided wherever twenty-five persons are employed above the second story of any building.

These two measures were enacted without the direct initiative of the department, which had concentrated its efforts upon the passage of the child-labor law. The former is due to the efforts of the metal polishers' union, the latter to the underwriters, who had paid heavy premiums on losses of life by fire, and insisted upon some measures of facility for the firemen in sky-scrapers and other extra-hazardous places which had hitherto been traps for them. This law, too, comes incidentally, enormously to the advantage of the children. Some of the worst catastrophes of the last three years have been in places in which young girls were employed without either fire-walls, outside escapes, or any sort of fire drill.

There are still many steps which we must take before it can be claimed for Illinois that we are giving to the rising genera-

tion of the working class the advantages which the wealth and intelligence of the state entitle them to. We must borrow from New York the prohibition of the work of minors at night, and the prohibition of the employment of minors. Especially must the street children, the peddlers and vendors, the newsboys and bootblacks, and all the hordes of nondescript occupations, be brought under systematic supervision.

Finally, we must have compulsory education of the school children under sixteen years of age throughout the school year. No factory law is so good for the children as a law which keeps them not only negatively out of the factories, the stores, and the teeming, tempting, demoralizing streets, but positively at work acquiring industrial efficiency and value to an age past all need of child legislation.

No one knows as we know them the needs of the children; no one sees as we see them the evils of their work. If we do not take the initiative in this matter, who shall do so? If we leave it to the trades unions, there is danger that each may think only of the needs of its own membership; then the laws will indeed be special legislation, and the precedent of annulling them will be strengthened.

If, as in the case of the bottle-blowers, the union men employ children, or use their labor supplied by the corporation, then may we wait long and patiently but the initiative will never be taken. If we wait for the philanthropists, we may find hospitals built for newsboys to be repaired in, after being run over, but never a proposition that the unemployed men should sell the papers, and the children go to school all the year round. We may find vacations arranged for the cash children, but no urgency that the errands be done by 'phone and tube, and the children sent to get manual training.

The medical fraternity will bemoan the increase of consumption in the great cities, but will they help us to banish the little girls from the laundries? or advise legislation for shortening hours and equalizing the temperature in the ironing rooms? No; all these things must come from such as have technical knowledge, not only of the places in which work is done, but of the law as we get it in endeavoring to obtain convictions.

After the lapse of eight years since our first convention, we have to-day to contemplate an international hodge-podge of provisions governing the employment of children.

I believe the following scant list to contain all the states in which the lowest age of work is fourteen years for both boys and girls: New York, Pennsylvania, Illinois, Michigan, Indiana. Yet fifteen states and two provinces have factory inspectors, all of them publishing annual reports, with recommendations.

Surely there is room for us to show our sincerity in regard to the need of uniform legislation.

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