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COST OF LIVING IN THE DISTRICT OF COLUMBIA.

On December 20, 1916, the following joint resolution authorizing and directing the Department of Labor to make an inquiry into the cost of living in the District of Columbia and to report thereon to Congress as early as practicable was passed at the second session of the Sixty-fourth Congress:

Resolved by the Senate and House of Representatives of the United States of America in Congress assembled, That the Department of Labor be, and hereby is, authorized and directed to make an inquiry into the cost of living of wage earners in the District of Columbia, and to report thereon to Congress as early as practicable; and that there be appropriated for this purpose the sum of \$6,000.

SEC. 2. That the special agents and clerks employed under this appropriation shall be selected from among the persons eligible on any civil service register.

Approved, December 20, 1916.

The Bureau of Labor Statistics began the cost of living study in January, 1917, and completed the field work in June. Incomes and expenditures for the calendar year 1916 were obtained and some facts as to increasing cost of living in 1917. The tabulations were necessarily confined to 1916, so as to show expenses and incomes of all families for the same period. The inquiry was divided into two parts—first, cost of living of families, and second, cost of living of wage-earning women.

To get the incomes and expenditures of families special agents were sent out to interview housewives in their homes. To insure a fair representation of the working population of Washington, including Government clerks, the city was divided into districts and a fair proportion of schedules was obtained from each district. The different income groups up to \$2,000 are believed to be fairly proportioned also, although no information exists as to the total number of families in each specified income group.

The newspapers of Washington aided greatly in the study by making known to the people of the city the purposes of the study and by enlisting their hearty cooperation. The housewives generally welcomed the agents and gave them, as accurately as possible, all information asked.

Individual statements could not, of course, in most instances be made with bookkeeping accuracy. Of necessity much of the information was given from memory although some few families were found that kept correct book accounts of income and expenditure, while many kept partial accounts, and many more had store books. Often accounts kept by families could be used only as a general guide, owing to lack of uniformity in the keeping of family accounts and to different lumping of items of expenditure. An agent was able to check errors, however, with the assistance of the housekeeper, by careful questioning, by comparing statements of expenditure with prevailing prices, including rents, with store books and accounts, with income received, and with surplus or deficit. A list of prevailing prices of staple articles of food for the year 1916 was given the agents, thus enabling them to verify to a certain extent the statements as to prices paid. Some families were so much interested that they kept accurate itemized accounts of income and outgo for a month or more on sheets furnished by the bureau. These accounts served as an additional check. In these various ways the schedules were either corrected when possible, or rejected if too inaccurate to admit of correction.

The number of families scheduled was large enough to permit of trustworthy averages and deductions. Only in the lowest and highest income groups are the numbers so small as to make generalizations doubtful.

Schedules were obtained from 1,481 white families and from 629 colored families, making a total of 2,110 families. Only those families were scheduled whose principal breadwinner worked for wages or, if paid a salary, received not more than \$1,800 a year. Families with incomes from sources other than the earnings of the head of the house were included, however, even though the total income exceeded \$1,800. No families were taken which had not resided in the District of Columbia for all of 1916, and families with vacations covering a period of more than two months or eight weeks were omitted.

The term "family," as used in this investigation and report, means any group of persons living together in one establishment as a home. It includes households in which there were boarders or lodgers, or both (working children contributing only part of their wages being classed as boarders and lodgers), if such persons were living in close association with the family proper; but boarding houses were excluded. No effort was made to limit the study to families of any minimum size, as one of the important objects was to obtain a clear view of all varieties of family life in the District. As a result some of the families scheduled were of very small size, including a few

cases in which the net family consisted of a widow, owning her home, and taking in boarders. But the average size of the family households covered was 4.9 members; and the average of the net family (i. e., excluding all persons, including children, living as boarders or lodgers), was 3.7 members.

SUMMARY OF FAMILY INCOMES.

The present article gives a summary view of family incomes in the District. Succeeding articles, and the final report, will contain further analysis of these incomes, of the personnel of the families, and of the character of their expenditures.

The number of families, white and colored, with a surplus or deficit, or neither a surplus nor a deficit at the end of the year 1916, arranged by income groups, is shown in the following table. The original tabulations as shown in later tables were made by income differences of \$100, from families having less than \$200 income to those having \$2,000 and more; but for the purpose of this summary, condensation has been made into groups with income spread of \$300, starting with incomes below \$600 and ending with \$1,500 and over.

WHITE AND COLORED FAMILIES REPORTING A SURPLUS, A DEFICIT, OR NEITHER A SURPLUS NOR A DEFICIT, BY INCOME GROUPS.

Income group.	Number of families.	Average size of family (household).	Average size of net family.	Surplus.		Deficit.		Neither surplus nor deficit.	
				Number.	Per cent.	Number.	Per cent.	Number.	Per cent.
Under \$600:									
White.....	65	3.6	2.8	8	12.3	20	30.8	37	56.9
Colored.....	180	4.0	2.9	10	5.6	65	36.1	105	58.3
Total.....	245	3.9	2.9	18	7.3	85	34.7	142	58.0
\$600 and under \$900:									
White.....	270	4.4	3.6	41	15.2	96	35.6	133	49.3
Colored.....	292	4.8	3.6	22	7.5	88	30.1	182	62.3
Total.....	562	4.6	3.6	63	11.2	184	32.7	315	56.0
\$900 and under \$1,200:									
White.....	375	4.8	3.7	83	22.1	126	33.6	166	44.3
Colored.....	113	5.5	3.8	23	20.4	35	31.0	55	48.7
Total.....	488	4.9	3.7	106	21.7	161	33.0	221	45.3
\$1,200 and under \$1,500:									
White.....	400	5.1	4.0	129	32.3	119	29.8	152	38.0
Colored.....	26	6.2	4.2	9	34.6	6	23.1	11	42.3
Total.....	426	5.1	4.0	138	32.4	125	29.3	163	38.3
\$1,500 and over:									
White.....	371	5.5	4.0	186	50.1	68	18.3	117	31.5
Colored.....	18	5.6	4.1	9	50.0	3	16.7	6	33.3
Total.....	389	5.5	4.0	195	50.1	71	18.3	123	31.6
Total:									
White.....	1,481	4.9	3.8	447	30.2	420	28.4	605	40.9
Colored.....	629	4.8	3.5	73	11.6	197	31.3	359	57.1
Total.....	2,110	4.9	3.7	520	24.6	626	29.7	964	45.7

This little summary reveals a shocking state of economic indecency. Just how much is needed for the support of a normal family in moderate comfort is difficult to estimate. Previous studies indicate that, in a large city, the barest minimum upon which existence for a normal family can be maintained upon a level of common decency can not be less than \$900 or \$1,000.¹ Such a sum, moreover, is estimated to permit of nothing more than the mere creature necessities. To maintain a real family life upon the much eulogized "American standard of living" would certainly demand a considerably larger sum.

It is startling, therefore, to learn that in the Capital of the Nation, in a year of unprecedented high prices, 807, or 38 per cent, of the 2,110 families investigated had yearly incomes of less than \$900; and 1,295 families, or 61 per cent, had incomes of less than \$1,200 a year. As noted above, some of these families were of small size, but the averages were not abnormally low. Thus, for families receiving less than \$900 per year the family household averaged 4.4 members and the net family (i. e., excluding boarders and lodgers) averaged 3.4 members; for families receiving less than \$1,200 the corresponding averages were 4.6 and 3.5.

The Negroes fared worse than the whites. Out of 629 Negro families 180, or nearly 29 per cent, were obliged to try to keep body and soul together on less than \$600 a year, and 472, or no less than three-quarters of the total, lived on less than \$900. Among the white families conditions were better, but not vastly so. Out of 1,481 such families there were 65 who had less than \$600 to keep them through the year, while no less than 335, or nearly 23 per cent, existed on less than \$900, and 710, or almost one-half, had less than \$1,200 a year.

Nor in all cases did the family incomes referred to represent merely the earnings of the male head of a household in which the wife was at home and the children in school. In 268 families (145 white and 123 Negro) there was no male head. In 597 families (166 white and 431 Negro) the wife was at work. In 297 families (204 white and 93 Negro) one or more children were at work. In 1,112 families (756 white and 356 Negro) boarders and lodgers lived with the family and receipts from this source helped to pay the family bills. Further, it is of interest to note that in 211 cases (83 white and 128 Negro) the family was aided by gifts of second-hand clothing. This is a form of charity which is usually accepted only under the pressure of severe need.

The pinch of economic distress among a large proportion of families is also clearly indicated by the fact that almost one-third of the families, both white and Negro, finished the year with deficits.

¹ See, for instance, the report on the increased cost of living for an unskilled laborer's family in New York City, prepared by the Bureau of Personal Service of the Board of Estimate and Apportionment, in February, 1917.

Whether these deficits were due in part to the extraordinary price advances of 1916 or whether they represent the chronic condition of so many families can not be determined from the facts gathered during the survey. In any case, in that particular year, only 520 out of the total of 2,110 families, 24.6 per cent, were able to show a surplus; the best that 964, or 45.7 per cent, could do was to come out even, and 626, or 29.7 per cent, wound up the year with deficits.

The deficits stand out with particular prominence in the low income groups. Most of these families lived literally from hand to mouth. About the best they could hope for was to come out even. Out of the total of 807 families having incomes under \$900, only 81 (49 white and 32 Negro) showed a balance of income over expenditure at the end of the year. Of the remaining 726 families receiving less than \$900, 457 (170 white and 287 Negro) at best did no better than to keep expenditures within income, and 269 (116 white and 153 Negro) could not even do this, finishing the year with deficits, which in many cases meant debt.

GENERAL RESULTS OF THE INVESTIGATION.

The three following tables present the more significant facts brought out as a result of the investigation. These tables will be the subject of later analysis. As presented here they are accompanied with sufficient explanatory notes, it is believed, to make their meaning clear.

Table 1. Personnel of families and sources and amount of income.

Table 2. General expenditures of families.

Table 3. Families with surplus and deficit in 1916, by income groups.

Explanatory notes to tables.

Table 1. Personnel of families and sources and amount of income.

Columns 2 and 3. The distinction between the terms "family" and "net family," as used in this report, is as follows:

"Family" covers everyone living in the household, including boarders and lodgers.

"Net family" covers all persons in the household except boarders, lodgers, and servants. Thus, it covers husbands, wives, dependent children, such working children as contribute their whole income, and other persons living with the family who are supported out of the family fund and who contribute their income, if any, to the family fund.

Column 4. "Husbands or male heads" includes the husband or the male adult who may be the chief support or responsible head of the family.

Column 7. "Wives or female heads" includes the wife or the female adult who may be the head of the family in the absence of a male head, as a single woman, a widow, or a divorced or separated wife.

Column 10. "Children" includes children not working and also those who turn over their entire earnings to the family and receive their support from the common family fund.

Column 15. "Other members of net family" includes all members of family, other than husbands, wives, and their children, who are supported from the common family fund and contribute their earnings, if any, to the family fund.

Column 19. "Boarders and lodgers, and either" includes children of the family who have the status of boarders and lodgers, the classification being based on the economic condition rather than the blood relationship.

Table 2. General expenditures of families.

Column 4. "Persons consuming food" includes all persons eating at the family table.

Column 5. "Equivalent adult male" has been computed on the following basis:

1. That all adult males in a family consume a like amount of food.
2. That each adult female consumes 90 per cent as much as an adult male.
3. That a child 11 to 14 years of age, inclusive, consumes 90 per cent as much as an adult male.
4. That a child 7 to 10 years of age, inclusive, consumes 75 per cent as much as an adult male.
5. That a child 4 to 6 years of age, inclusive, consumes 40 per cent as much as an adult male.
6. That a child 3 years of age or under consumes 15 per cent as much as an adult male.

When any member of the family consumed food for a fractional part of the year only, a proportional fraction of the normal consumption was taken. For example, an adult male boarder for three months would be rated as $\frac{3}{12}$ of 1 or 0.25.

Columns 12 and 14. "Families renting" includes only those families which rented the full year and excludes all families which both rented and owned homes during 1916.

Column 16. "Families owning homes" includes only those families that occupied an owned home during the entire year 1916.

Column 17. "Amount per family spent on owned home" includes all payments on the owned home made during 1916 as principal, interest, general, special, or water tax, insurance, and repairs.

Column 18. "Families reporting amount for fuel and light" includes only those families which paid for both fuel and light for the entire year of 1916, apart from any payment for rent.

Column 21. "Other purposes" includes life insurance, charity, religion, dues for labor and other organizations, car fare, furniture and utensils, books and newspapers, amusements, vacation, distilled and fermented liquors, tobacco, funeral expenses, laundry, etc.

TABLE 1.—PERSONNEL OF FAMILIES

Income group.	Families.			Husbands or male heads.			Wives or female heads.		
	Number.	Average size of family (household).	Average size of net family.	Families having.	Working.		Families having.	Working.	
					Number.	Average earnings.		Number.	Average earnings.
	1	2	3	4	5	6	7	8	9
Under \$200:									
White.....	1	3.0	1.0				1		
Colored.....	1	3.0	1.0				1	1	\$91.00
Total.....	2	3.0	1.0				2	1	91.00
\$200 and under \$300:									
White.....	4	3.0	2.8	1	1	\$275.00	4	2	240.50
Colored.....	12	2.8	2.3	1	1	234.00	12	11	181.00
Total.....	16	2.8	2.4	2	2	251.50	16	13	190.15
\$300 and under \$400:									
White.....	6	2.0	1.5	3	3	335.00	5	3	172.33
Colored.....	19	3.6	2.8	8	7	287.64	19	15	157.20
Total.....	25	3.2	2.5	11	10	301.85	24	18	159.72
\$400 and under \$500:									
White.....	17	4.1	3.1	12	8	403.45	17	5	148.90
Colored.....	60	4.2	2.9	31	31	392.57	60	37	1 208.33
Total.....	77	4.1	2.9	43	39	394.80	77	42	1 201.25
\$500 and under \$600:									
White.....	37	3.8	3.0	21	21	521.23	36	10	1 151.30
Colored.....	88	4.1	3.0	62	61	1 437.08	86	68	2 178.31
Total.....	125	4.0	3.0	83	82	1 458.63	122	78	3 174.80
\$600 and under \$700:									
White.....	52	4.3	3.4	36	34	556.17	52	13	165.06
Colored.....	116	4.3	3.5	99	99	492.46	115	87	1 175.79
Total.....	168	4.3	3.5	135	133	508.74	167	100	1 174.39
\$700 and under \$800:									
White.....	104	4.1	3.5	89	87	703.24	101	12	133.07
Colored.....	104	5.1	3.7	97	97	556.58	102	73	163.41
Total.....	208	4.6	3.6	186	184	625.93	203	85	159.12
\$800 and under \$900:									
White.....	114	4.8	3.9	101	98	726.79	113	19	118.95
Colored.....	72	5.0	3.7	65	65	600.97	71	47	182.95
Total.....	186	4.9	3.8	166	163	676.62	184	66	164.53
\$900 and under \$1,000:									
White.....	133	4.7	3.7	120	118	794.52	131	15	259.26
Colored.....	57	5.5	3.9	50	49	704.90	57	37	178.94
Total.....	190	4.9	3.7	170	167	768.22	188	52	202.11
\$1,000 and under \$1,100:									
White.....	127	4.5	3.5	114	110	904.32	125	9	127.44
Colored.....	37	5.5	3.7	36	36	754.06	36	19	190.00
Total.....	164	4.7	3.5	150	146	867.27	161	28	169.89
\$1,100 and under \$1,200:									
White.....	115	5.1	3.9	106	103	955.52	115	12	214.43
Colored.....	19	5.7	3.5	17	17	713.05	19	16	279.53
Total.....	134	5.2	3.9	123	120	921.17	134	28	251.63

¹ Including earnings of one other member of family whose earnings were inseparably combined with those of head.

² Not including one whose earnings were inseparably combined with those of head of family.

³ See notes to details.

AND SOURCES AND AMOUNT OF INCOME.

Children.					Other members of net family.				Boarders and lodgers, and either.			Other sources of income.		Average total income per family.
Families having.	Average number per family having.	Working.			Families having.	Average number per family having.	Contributing.		Families having.	Average No. per family.	Average amount received per family.	No. of families having.	Average amount per family.	
		Families having.	Number of children.	Average earnings per family.			Number of families having.	Average amount received per family.						
10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
									1	2.0	\$136.00	1	\$45.00	\$181.00
									1	2.0	78.00	1	15.00	184.00
									2	2.0	107.00	2	30.00	182.50
3	2.0	1	2	\$55.00					1	1.0	237.00	1	21.50	267.38
4	2.0	2	2	15.50	6	1.0	2	\$50.25	4	1.5	92.00	10	32.81	254.38
7	2.0	3	4	28.67	6	1.0	2	50.25	5	1.4	121.00	11	31.78	257.63
									2	1.5	103.00	4	96.06	352.04
									8	1.9	103.81	8	77.23	361.17
									10	1.8	103.65	12	83.50	358.98
10	2.0	2	2	156.00	3	1.0	1	12.00	11	1.6	191.00	9	166.41	464.40
35	2.2	12	14	\$169.78	5	1.0	1	150.00	35	2.2	144.26	22	43.08	459.21
45	2.1	10	16	\$167.27	8	1.0	2	81.00	46	2.1	155.43	31	78.88	460.35
20	2.6	3	3	\$539.50	2	1.0			15	2.0	329.50	22	88.82	552.28
52	2.0	12	13	148.00	10	1.4	3	103.33	46	2.0	130.65	32	49.49	548.73
72	2.2	15	16	\$203.93	12	1.3	3	103.33	61	2.0	179.55	54	65.51	549.78
34	2.4	10	11	293.50	4	1.0			22	2.1	309.95	35	77.48	644.64
77	2.2	14	17	213.52	16	1.3	3	\$26.00	55	1.8	105.41	41	63.71	650.84
111	2.3	24	28	246.84	20	1.2	3	\$26.00	77	1.9	163.85	76	70.05	648.92
70	2.4	12	13	257.02	3	1.3	1	6.00	35	1.7	221.71	45	93.50	748.47
68	2.3	12	17	155.47	16	1.7	2	225.00	60	2.5	125.93	49	49.52	752.07
138	2.4	24	30	206.24	19	1.6	3	152.00	95	2.2	161.22	94	70.62	750.27
89	2.4	19	23	261.39	12	1.2	3	92.33	54	2.0	218.08	60	103.11	848.18
46	2.3	7	9	230.00	15	1.3	5	260.00	42	2.3	178.06	31	95.11	847.20
135	2.4	26	32	252.94	27	1.2	8	197.13	96	2.1	200.57	91	100.38	847.80
100	2.2	20	27	237.83	10	1.3			67	2.0	283.68	64	62.83	943.06
40	2.8	10	15	125.34	5	1.0	2	219.50	39	2.2	219.87	22	97.47	939.87
140	2.4	30	42	200.33	15	1.2	2	219.50	106	2.1	260.20	86	71.69	942.10
85	2.3	12	13	333.29	8	1.1	2	327.00	63	2.1	330.63	55	134.97	1,051.41
25	2.2	8	9	175.12	7	1.6	2	160.00	24	2.8	202.38	16	83.99	1,045.35
110	2.3	20	22	270.02	15	1.3	4	243.50	87	2.3	295.25	71	123.48	1,050.04
90	2.5	18	19	317.97	4	1.3			67	2.1	255.64	55	143.03	1,145.30
14	2.1	4	4	260.33	1	1.0			15	2.7	239.13	10	55.62	1,146.26
104	2.4	22	23	307.49	5	1.2			82	2.2	252.62	65	129.58	1,145.43

TABLE 3.—PERSONNEL OF FAMILIES AND SOURCES

Income group.	Families.			Husbands or male heads.		Wives or female heads.			
	Number.	Average size of family (household).	Average size of net family.	Families having.	Working.		Families having.	Working.	
					Number.	Average earnings.		Number.	Average earnings.
	1	2	3	4	5	6	7	8	9
\$1,200 and under \$1,300:									
White.....	165	4.9	3.9	154	152	\$1,087.69	164	12	\$33.31
Colored.....	12	5.8	3.7	11	11	856.45	12	6	232.83
Total.....	177	5.0	3.9	165	163	1,072.08	176	18	159.81
\$1,300 and under \$1,400:									
White.....	115	5.3	4.1	106	104	1,161.97	113	11	386.45
Colored.....	9	6.2	4.2	7	7	972.57	9	5	282.60
Total.....	124	5.4	4.1	113	111	1,150.02	122	16	354.06
\$1,400 and under \$1,500:									
White.....	120	5.0	4.0	118	118	1,241.59	119	6	116.83
Colored.....	5	7.0	5.4	5	5	943.80	5	2	205.00
Total.....	125	5.1	4.1	123	123	1,229.48	124	8	138.88
\$1,500 and under \$1,600:									
White.....	101	4.8	3.7	98	98	1,308.67	100	8	339.25
Colored.....	8	5.4	3.4	7	7	1,175.94	8	3	430.00
Total.....	109	4.8	3.7	105	105	1,299.83	108	11	364.00
\$1,600 and under \$1,700:									
White.....	69	5.6	4.2	67	66	1,329.21	69	6	268.67
Colored.....	6	6.0	5.2	6	6	1,167.48	6	3	423.67
Total.....	75	5.6	4.2	73	72	1,315.73	75	9	320.33
\$1,700 and under \$1,800:									
White.....	53	5.3	3.7	51	51	1,360.20	53	9	327.89
Colored.....	1	3.0	2.0	1	1	1,515.00	1	1	156.00
Total.....	54	5.3	3.6	52	52	1,363.17	54	10	310.70
\$1,800 and under \$1,900:									
White.....	58	5.3	3.9	56	56	1,476.30	58	5	418.63
Colored.....	1	6.0	6.0	1	1	1,800.00	1		
Total.....	59	5.3	3.9	57	57	1,481.98	59	5	418.63
\$1,900 and under \$2,000:									
White.....	29	6.1	4.2	28	27	1,488.92	29	2	23.00
Colored.....									
Total.....	29	6.1	4.2	28	27	1,488.92	29	2	23.00
\$2,000 and under \$2,100:									
White.....	17	5.5	4.0	14	14	1,440.02	17	2	400.00
Colored.....	1	4.0	4.0	1	1	2,000.00	1		
Total.....	18	5.4	4.0	15	15	1,477.35	18	2	400.00
\$2,100 and under \$2,200:									
White.....	18	7.4	4.4	16	15	1,383.45	18	2	582.50
Colored.....	1	8.0	5.0	1	1	1,560.00	1		
Total.....	19	7.4	4.4	17	16	1,394.49	19	2	582.50
\$2,200 and over:									
White.....	26	6.7	4.3	25	25	1,378.05	26	3	357.00
Colored.....									
Total.....	26	6.7	4.3	25	25	1,378.05	26	3	357.00
All groups:									
White.....	1,481	4.9	3.8	1,336	1,309	1,050.18	1,466	166	¹ 213.20
Colored.....	629	4.8	3.5	506	503	¹ 595.93	622	431	¹ 188.18
Total.....	2,110	4.9	3.7	1,842	1,812	¹ 924.08	2,088	597	¹ 195.15

¹ See notes to details.

AND AMOUNT OF INCOME—Concluded.

Children.					Other members of net family.				Boarders and lodgers, and either.			Other sources of income.		Average total income per family.
Families having.	Average number per family having.	Working.			Families having.	Average number per family having.	Contributing.		Families having.	Average No. per family.	Average amount received per family.	No. of families having.	Average amount per family.	
		Families having.	Number of children.	Average earnings per family.			Number of families having.	Average amount received per family.						
10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
129 6	2.4 3.2	16 2	21 3	\$363.30 273.00	8 2	1.5 1.0	2 1	\$528.10 7.00	76 7	2.2 3.7	\$309.92 266.64	79 7	\$99.31 201.90	\$1,240.71 1,250.89
135	2.4	18	24	353.27	10	1.4	3	354.40	83	2.3	306.27	86	107.66	1,241.40
90 6	2.6 2.8	19 2	25 5	296.53 907.50	13 2	1.5 2.5	1 1	624.00 156.00	57 6	2.4 3.0	307.51 215.00	52 5	106.76 116.00	1,342.90 1,340.33
96	2.6	21	30	354.71	15	1.6	2	390.00	63	2.4	298.70	57	107.57	1,342.71
93 5	2.5 3.4	9 2	13 4	297.41 394.00	9	1.1	.....	.....	59 3	2.1 2.7	243.89 373.00	54 1	157.61 96.00	1,439.88 1,426.60
98	2.5	11	17	314.97	9	1.1	.....	.....	62	2.1	250.15	55	156.49	1,439.35
77 3	2.1 1.7	12	14	349.08	9 2	1.2 3.5	.....	.....	54 6	1.9 2.7	276.65 143.17	36 5	137.02 172.86	1,534.90 1,535.36
80	2.1	12	14	349.08	11	1.6	1	1,038.00	60	2.0	263.30	41	141.39	1,534.93
62 6	2.3 2.7	13 1	18 2	335.58 207.00	5 2	1.2 1.0	.....	.....	42 3	2.3 2.0	319.22 163.00	30 2	208.49 319.00	1,642.96 1,641.65
68	2.3	14	20	325.39	7	1.1	1	240.00	45	2.3	308.81	32	215.40	1,642.86
45	2.0	7	10	346.14	2	1.0	.....	.....	35 1	2.4 1.0	376.57	25 1	184.00 36.00	1,745.74 1,707.00
45	2.0	7	10	346.14	2	1.0	.....	.....	36	2.3	366.11	26	178.31	1,745.02
44 1	2.4 3.0	7	11	499.43	5 1	1.0 1.0	.....	.....	30	2.5	481.70	20	165.73	1,828.06 1,800.90
45	2.4	7	11	499.43	6	1.0	.....	.....	30	2.5	481.70	20	165.73	1,827.59
22	2.8	7	9	328.06	1	1.0	.....	.....	23	2.3	388.58	11	435.67	1,940.44
22	2.8	7	9	328.06	1	1.0	.....	.....	23	2.3	388.58	11	435.67	1,940.44
12 1	2.8 2.0	4	7	800.75	2	2.0	1	200.00	12	2.2	417.83	8	651.91	2,034.85 2,000.00
13	2.7	4	7	800.75	2	2.0	1	200.00	12	2.2	417.83	8	651.91	2,032.91
13 1	2.9 3.0	5	7	617.40	5	1.4	.....	.....	13 1	3.8 3.0	577.77 624.00	10	612.23	2,146.50 2,184.00
14	2.9	5	7	617.40	5	1.4	.....	.....	14	3.7	581.07	10	612.23	2,148.48
20	2.9	8	15	803.03	1	1.0	.....	.....	17	3.4	838.29	16	548.44	2,498.94
20	2.9	8	15	803.03	1	1.0	.....	.....	17	3.4	838.29	16	548.44	2,498.94
1,108 402	2.4 2.3	204 93	263 124	1347.37 1194.50	107 95	1.2 1.4	11 24	257.20 198.37	756 356	2.2 2.3	314.95 158.53	692 263	147.74 72.82	1,231.44 761.07
1,510	2.4	297	387	299.69	202	1.3	35	217.40	1,112	2.2	264.87	955	127.11	1,091.22

TABLE 2.—GENERAL EXPENDI

Income group.	Families.			Persons consuming food.		Families having gifts of second-hand clothing.	Average expenditures.		
	No.	Average size of family (household).	Average size of net family.	Average number.	Equivalent adult males.		For food.		
							Per family.	Per person.	Per equivalent adult male.
	1	2	3	4	5	6	7	8	9
\$100 and under \$200:									
White.....	1	3.0	1.0	1.0	0.90	.....	\$81.00	\$81.00	\$90.00
Colored.....	1	3.0	1.0	1.0	.90	.....	52.00	52.00	57.78
Total.....	2	3.0	1.0	1.0	.90	.....	66.50	66.50	73.89
\$200 and under \$300:									
White.....	4	3.0	2.8	3.0	2.23	1	198.38	66.13	89.16
Colored.....	12	2.8	2.3	2.2	1.43	6	99.12	45.75	69.19
Total.....	16	2.8	2.4	2.4	1.63	7	123.93	52.18	76.00
\$300 and under \$400:									
White.....	6	2.0	1.5	1.7	1.51	1	182.65	109.59	120.83
Colored.....	19	3.6	2.8	3.2	2.50	6	138.52	43.86	55.36
Total.....	25	3.2	2.5	2.8	2.26	7	149.11	53.25	65.85
\$400 and under \$500:									
White.....	17	4.1	3.1	3.8	2.90	3	223.16	59.28	76.90
Colored.....	60	4.2	2.9	3.4	2.50	25	189.83	55.56	75.89
Total.....	77	4.1	2.9	3.5	2.59	28	197.19	56.44	76.14
\$500 and under \$600:									
White.....	37	3.8	3.0	3.6	2.75	2	268.12	73.48	97.65
Colored.....	88	4.1	3.0	3.4	2.57	23	230.73	68.14	89.90
Total.....	125	4.0	3.0	3.5	2.62	25	241.80	69.80	92.31
\$600 and under \$700:									
White.....	52	4.3	3.4	4.0	3.06	13	321.28	79.94	104.98
Colored.....	116	4.3	3.5	3.7	2.85	32	272.35	72.96	95.54
Total.....	168	4.3	3.5	3.8	2.92	45	287.49	75.23	98.61
\$700 and under \$800:									
White.....	104	4.1	3.5	3.9	3.07	12	364.36	92.65	118.49
Colored.....	104	5.1	3.7	4.1	2.98	19	301.78	74.37	101.25
Total.....	208	4.6	3.6	4.0	3.03	31	333.07	83.37	110.01
\$800 and under \$900:									
White.....	114	4.8	3.9	4.7	3.49	6	386.37	82.79	110.68
Colored.....	72	5.0	3.7	4.5	3.40	7	342.96	76.69	100.74
Total.....	186	4.9	3.8	4.6	3.46	13	369.57	80.49	106.89
\$900 and under \$1,000:									
White.....	133	4.7	3.7	4.4	3.43	12	420.72	95.33	122.52
Colored.....	57	5.5	3.9	4.7	3.63	7	372.53	78.07	102.52
Total.....	190	4.9	3.7	4.5	3.49	19	406.26	89.86	116.28
\$1,000 and under \$1,100:									
White.....	127	4.5	3.5	4.4	3.42	5	448.84	103.08	131.07
Colored.....	37	5.5	3.7	4.5	3.56	1	397.09	87.45	111.64
Total.....	164	4.7	3.5	4.4	3.45	6	437.17	99.44	126.56
\$1,100 and under \$1,200:									
White.....	115	5.1	3.9	4.8	3.81	6	502.43	103.92	131.94
Colored.....	19	5.7	3.5	4.8	4.03	1	443.65	92.63	109.96
Total.....	134	5.2	3.9	4.8	3.84	7	494.10	102.33	128.67
\$1,200 and under \$1,300:									
White.....	165	4.9	3.9	4.8	3.75	5	510.52	107.03	136.23
Colored.....	12	5.8	3.7	4.5	3.83	.....	419.19	93.15	109.33
Total.....	177	5.0	3.9	4.8	3.75	5	504.33	106.14	134.37

¹ This average is based on the number of persons in the net family (see column 3).
² It should be noted that in over one-half of these apartments rent included heating, and in many cases it included lighting. See footnotes to averages for all groups.
³ Rent for one house included heat.

TURES OF FAMILIES.

Average expenditures.												
For clothing.		For housing.						For fuel and light.		Com- bined housing, fuel, and light (all fam- ilies).	For other pur- poses.	All ex- pendi- tures.
Per family.	Per person. ¹	Families renting apartments. ²		Families renting houses.		Families owning homes.		Families report- ing amount.	Average amount.			
		No.	Average rent per family. ²	No.	Average rent per family.	No.	Amount per family.					
10	11	12	13	14	15	16	17	18	19	20	21	22
\$17.00	\$17.00	.....	.....	.....	.....	1	\$25.50	1	\$53.00	\$78.50	\$4.50	\$181.00
1.00	1.00	.....	.....	1	\$90.00	.....	.....	1	37.00	127.00	11.50	191.50
9.00	9.00	.....	.....	1	90.00	1	25.50	2	45.00	102.75	8.00	186.25
25.13	9.14	.....	.....	2	72.00	1	49.00	4	30.05	87.30	48.58	359.38
12.77	5.67	6	\$69.00	6	104.60	.....	.....	12	26.70	113.50	34.41	259.80
15.86	6.68	6	69.00	8	96.45	1	49.00	16	27.54	106.95	37.95	284.69
27.02	18.01	2	135.00	1	120.00	3	67.63	6	49.32	148.13	41.85	399.64
21.50	7.71	2	141.00	11	125.51	3	93.33	17	40.81	167.37	61.20	388.59
22.83	9.20	4	138.00	12	125.05	6	80.48	23	43.03	162.75	56.56	391.25
31.88	10.42	2	100.50	7	150.86	5	49.97	16	46.07	158.35	65.05	478.43
25.46	8.83	2	123.00	46	155.73	2	139.09	58	42.78	187.94	70.99	474.21
26.88	9.20	4	111.75	53	155.09	7	75.43	74	43.49	181.40	69.68	475.14
44.40	14.94	4	152.25	16	160.58	8	40.19	32	52.13	178.85	78.73	570.11
36.29	12.01	10	143.20	56	170.43	3	110.08	84	46.15	200.36	93.14	560.53
38.69	12.86	14	145.79	72	168.24	11	59.25	116	47.80	193.99	88.88	563.36
46.88	13.93	3	210.67	28	170.25	10	85.65	46	54.02	204.41	116.16	688.73
53.58	15.35	14	132.75	89	174.52	4	112.83	114	50.44	217.73	118.46	662.12
51.51	14.92	17	146.50	117	173.50	14	93.41	160	51.47	213.61	117.75	670.36
62.33	17.81	12	173.60	59	\$171.38	18	89.61	90	54.21	206.84	140.00	773.53
57.47	15.49	6	129.00	77	216.29	4	282.90	102	56.10	268.48	136.84	764.58
59.90	16.61	18	158.73	136	\$196.80	22	124.76	192	55.22	237.66	138.42	769.05
74.21	19.01	13	174.92	66	185.04	15	130.78	101	58.86	234.78	166.67	862.02
76.66	20.99	3	213.00	54	206.33	5	185.70	71	58.26	265.12	179.40	864.15
75.16	19.74	16	182.06	120	194.62	20	144.51	172	58.61	246.52	171.59	862.84
88.19	24.09	15	202.42	78	208.82	17	166.55	120	65.81	267.89	189.24	966.04
87.21	22.09	2	187.50	38	238.25	11	236.88	56	69.13	310.35	173.20	943.27
87.90	23.46	17	200.66	116	218.46	28	194.18	176	66.86	280.62	184.43	959.21
94.37	27.05	17	248.75	64	233.22	29	156.26	108	70.05	283.75	222.72	1,049.69
101.31	27.16	2	171.00	27	275.79	6	259.51	37	70.41	316.30	228.55	1,043.24
95.93	27.08	19	240.57	91	245.85	35	173.13	145	70.14	291.09	224.04	1,018.23
104.50	26.71	9	248.44	63	235.68	26	188.88	104	78.75	304.63	249.09	1,160.65
102.99	29.21	.....	.....	16	273.03	3	397.13	19	84.28	376.90	247.50	1,171.05
104.29	27.03	9	248.44	79	243.24	29	210.42	123	79.60	314.87	248.86	1,162.12
121.06	31.26	14	282.71	83	259.04	48	227.99	151	78.32	331.43	270.23	1,233.24
120.02	32.73	.....	.....	8	295.88	3	397.99	11	79.62	405.16	240.85	1,185.21
120.99	31.35	14	282.71	91	262.28	51	237.99	162	78.41	336.43	268.24	1,229.98

TABLE 2.—GENERAL EXPENDI

Income group.	Families.			Persons con- suming food.		Fami- lies having gifts of second- hand cloth- ing.	Average expenditures.		
	No.	Average size of family (house- hold).	Average size of net family.	Average num- ber.	Equiv- alent adult males.		Per food.		
							Per family.	Per person.	Per equiv- alent adult male.
	1	2	3	4	5	6	7	8	9
\$1,300 and under \$1,400:									
White.....	115	5.3	4.1	4.9	3.78	7	\$526.53	\$106.42	\$139.16
Colored.....	9	6.2	4.2	5.8	4.22	1	475.32	82.27	112.58
Total.....	124	5.4	4.1	5.0	3.82	8	522.81	104.39	137.02
\$1,400 and under \$1,500:									
White.....	120	5.0	4.0	4.8	3.83	4	538.46	111.21	140.69
Colored.....	5	7.0	5.4	6.8	5.66	.....	602.76	88.64	106.57
Total.....	125	5.1	4.1	4.9	3.90	4	541.03	109.97	138.72
\$1,500 and under \$1,600:									
White.....	101	4.8	3.7	4.5	3.62	2	560.03	124.59	154.50
Colored.....	8	5.4	3.4	4.8	3.95	.....	484.00	96.80	122.65
Total.....	109	4.8	3.7	4.5	3.65	2	554.45	122.83	151.98
\$1,600 and under \$1,700:									
White.....	69	5.6	4.2	5.4	4.34	1	620.76	113.92	143.10
Colored.....	6	6.0	5.2	5.8	5.13	.....	613.96	105.25	119.80
Total.....	75	5.6	4.2	5.5	4.40	1	620.21	113.18	140.93
\$1,700 and under \$1,800:									
White.....	53	5.3	3.7	5.2	4.27	1	617.67	119.91	144.65
Colored.....	1	3.0	2.0	3.0	2.05	.....	380.00	126.67	185.37
Total.....	54	5.3	3.6	5.1	4.23	1	613.27	119.99	145.02
\$1,800 and under \$1,900:									
White.....	58	5.3	3.9	5.2	4.37	1	676.30	129.46	154.66
Colored.....	1	6.0	6.0	6.0	4.70	.....	518.00	86.33	110.21
Total.....	59	5.3	3.9	5.2	4.38	1	673.61	128.62	153.85
\$1,900 and under \$2,000:									
White.....	29	6.1	4.2	5.8	4.70	.....	658.26	114.31	140.14
Colored.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Total.....	29	6.1	4.2	5.8	4.70	.....	658.26	114.31	140.14
\$2,000 and under \$2,100:									
White.....	17	5.5	4.0	5.1	4.04	.....	639.95	126.50	158.27
Colored.....	1	4.0	4.0	4.0	3.13	.....	489.52	122.38	156.40
Total.....	18	5.4	4.0	5.0	3.99	.....	631.60	126.32	158.18
\$2,100 and under \$2,200:									
White.....	18	7.4	4.4	7.3	5.69	1	823.94	113.21	144.75
Colored.....	1	8.0	5.0	8.0	5.60	.....	832.00	194.00	148.57
Total.....	19	7.4	4.4	7.3	5.69	1	824.36	112.68	144.95
\$2,200 and over:									
White.....	26	6.7	4.3	6.7	5.65	.....	860.92	128.64	152.40
Colored.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Total.....	26	6.7	4.3	6.7	5.65	.....	860.92	128.64	152.40
All groups:									
White.....	1,481	4.9	3.8	4.7	3.71	83	494.94	105.18	133.55
Colored.....	629	4.8	3.5	4.0	3.07	128	301.58	74.92	98.14
Total.....	2,110	4.9	3.7	4.5	3.52	211	437.30	97.12	124.33

¹ This average is based on the number of persons in the net family (see column 3).

² It should be noted that in over one-half of these apartments rent included heating and in many cases it included lighting. See footnotes to averages for all groups.

³ Rent for 55 apartments included heat only, rent for 22 apartments included heat and light, rent for one apartment included light only and rent for one apartment included light and part of heat.

EXPENDITURES OF FAMILIES—Concluded.

Average expenditures.												
For clothing.		For housing.						For fuel and light.		Com- bined housing, fuel, and light (all fam- ilies).	For other pur- poses.	All ex- pendi- tures.
Per family. 10	Per person. ¹ 11	Families renting apartments. ²		Families renting houses.		Families owning homes.		Families report- ing amount. 18	Average amount. 19				20	21	22
		No.	Average rent per family. ² 13	No.	Average rent per family. 15	No.	Amount per family. 17					
\$129.74 109.98	\$31.14 26.05	5 1	\$269.40 270.00	61 5	\$256.03 281.40	31 2	\$292.33 448.23	109 7	\$81.00 89.61	\$355.96 494.24	\$314.63 281.65	\$1,326.87 1,361.19
128.31	31.01	6	269.50	66	257.95	33	301.78	116	84.34	366.00	312.24	1,329.36
149.08 167.86	37.27 31.09	7 -----	271.71 -----	69 3	269.30 338.00	33 1	288.35 21.50	113 5	83.98 86.54	358.04 377.64	386.91 238.34	1,432.50 1,386.60
149.83	36.94	7	271.71	72	272.16	34	280.50	118	84.09	358.83	380.97	1,430.66
165.44 128.50	44.21 38.07	7 1	275.14 390.00	50 5	278.56 299.20	36 2	297.35 280.00	97 7	87.20 95.11	372.38 397.72	403.32 439.65	1,501.17 1,449.86
162.73	43.80	8	289.50	55	280.43	38	296.44	104	87.74	374.24	405.99	1,497.40
171.63 222.49	41.26 43.06	5 -----	296.40 -----	31 4	267.29 271.50	26 2	312.90 258.50	64 6	91.20 95.47	380.72 362.63	409.25 447.97	1,582.35 1,647.05
175.70	41.44	5	296.40	35	287.77	28	309.01	70	91.56	379.27	412.34	1,587.53
168.15 120.00	45.94 60.00	----- -----	----- -----	28 -----	296.74 -----	17 1	301.53 517.00	52 1	97.41 85.00	394.29 602.00	482.21 605.00	1,662.32 1,707.00
167.26	46.08	-----	-----	28	296.74	18	313.50	53	97.18	398.14	484.48	1,663.15
197.52 222.00	50.60 37.00	3 -----	380.00 -----	21 -----	315.71 -----	32 1	253.40 345.60	54 1	97.69 104.00	377.30 449.60	515.76 380.40	1,766.88 1,570.00
197.94	50.34	3	380.00	21	315.71	33	256.20	55	97.80	378.53	513.46	1,763.54
208.62	50.00	1	360.00	18	298.70	8	346.69	28	96.73	409.34	503.49	1,779.71
208.62	50.00	1	360.00	18	298.70	8	346.69	28	96.73	409.34	503.49	1,779.71
223.63 117.60	55.91 29.38	1	360.00	7	332.09	6 1	513.01 458.30	16 1	99.63 113.55	494.52 571.85	498.71 617.13	1,856.81 1,796.00
217.73	54.43	1	360.00	7	332.09	7	505.20	17	100.45	498.82	505.29	1,853.44
189.56 300.00	43.19 60.00	1 1	234.00 -----	10 -----	310.20 -----	7 -----	459.90 -----	18 1	105.92 68.00	497.77 302.00	560.97 750.00	2,072.22 2,184.00
195.37	44.19	1	234.00	10	310.20	7	459.90	19	103.92	487.46	570.91	2,078.10
258.31	60.50	3	342.00	10	344.40	11	300.77	22	123.21	463.35	650.70	2,233.27
258.31	60.50	3	342.00	10	344.40	11	300.77	22	123.21	463.35	650.70	2,233.27
119.69 63.70	31.63 18.31	123 50	\$236.35 \$145.13	772 446	\$238.53 202.63	388 54	235.83 245.63	1,352 611	76.82 56.09	312.47 255.77	288.93 148.07	1,216.03 769.12
103.00	27.89	173	\$209.99	1218	\$225.38	442	237.02	1,963	70.56	295.56	246.94	1,082.80

¹ Rent for one house included light.² Rent for 9 apartments included heat only, and rent for one apartment included heat and light.³ Rent for 64 apartments included heat only, rent for 23 apartments included heat and light, rent for one apartment included light only, and rent for one apartment included light and part of heat.

16 MONTHLY REVIEW OF THE BUREAU OF LABOR STATISTICS.

TABLE 3.—FAMILIES WITH SURPLUS AND DEFICIT IN 1916, BY INCOME GROUPS.

Income group.	Average size of family.		Families having—									All families.			
	Average size of net family.	Surplus.			Deficit.			Neither surplus nor deficit.		Number.	Per cent.	Average surplus.	Average deficit.		
		Number.	Per cent.	Average amount.	Number.	Per cent.	Average amount.	Number.	Per cent.						
\$100 and under \$200:															
White.....	3.0	1.0						1	100.0			1	100.0		
Colored.....	3.0	1.0						1	100.0	\$7.50		1	100.0	\$7.50	
Total.....	3.0	1.0						1	50.0	7.50		1	50.0	3.75	
\$200 and under \$300:															
White.....	3.0	2.8					1	25.0	368.00	3	75.0	4	100.0	92.00	
Colored.....	2.8	2.3					3	25.0	21.67	9	75.0	12	100.0	5.42	
Total.....	2.8	2.4					4	25.0	108.25	12	75.0	16	100.0	27.06	
\$300 and under \$400:															
White.....	2.0	1.5	1	16.7	\$30.00	2	33.3	157.80	3	50.0	6	100.0	47.60		
Colored.....	3.0	2.8	1	5.3	1.50	7	36.8	74.64	11	57.9	19	100.0	27.42		
Total.....	3.2	2.5	2	8.0	15.75	9	36.0	93.12	14	56.0	25	100.0	32.26		
\$400 and under \$500:															
White.....	4.1	3.1	2	11.8	78.50	6	35.3	65.93	9	52.9	17	100.0	14.03		
Colored.....	4.2	2.9	2	3.3	13.50	20	33.3	46.36	38	63.3	60	100.0	15.00		
Total.....	4.1	2.9	4	5.2	46.00	26	33.8	50.88	47	61.0	77	100.0	14.79		
\$500 and under \$600:															
White.....	3.8	3.0	5	13.5	29.60	11	29.7	73.43	21	56.8	37	100.0	17.33		
Colored.....	4.1	3.0	7	8.0	36.44	34	38.6	38.03	47	53.4	88	100.0	11.80		
Total.....	4.0	3.0	12	9.6	33.59	45	36.0	46.69	68	54.4	125	100.0	13.58		
\$600 and under \$700:															
White.....	4.3	3.4	7	13.5	42.73	17	32.7	152.47	28	53.8	52	100.0	44.09		
Colored.....	4.3	3.5	9	7.8	36.69	33	28.4	49.66	74	63.8	116	100.0	11.28		
Total.....	4.3	3.5	16	9.5	39.33	50	29.8	84.62	102	60.7	168	100.0	21.44		
\$700 and under \$800:															
White.....	4.1	3.5	13	12.5	59.10	38	36.5	88.80	53	51.0	104	100.0	25.06		
Colored.....	5.1	3.7	6	5.8	43.58	33	31.7	47.35	65	62.5	104	100.0	12.51		
Total.....	4.6	3.6	19	9.1	54.20	71	34.1	69.53	118	56.7	208	100.0	18.78		
\$800 and under \$900:															
White.....	4.8	3.9	21	18.4	69.20	41	36.0	73.93	52	45.6	114	100.0	13.84		
Colored.....	5.0	3.7	7	9.7	40.56	22	30.6	68.36	43	59.7	72	100.0	16.95		
Total.....	4.9	3.8	28	15.1	62.04	63	33.9	71.98	95	51.1	186	100.0	15.04		
\$900 and under \$1,000:															
White.....	4.7	3.7	27	20.3	56.13	52	39.1	87.94	54	40.6	133	100.0	22.99		
Colored.....	5.5	3.9	12	21.1	82.05	23	40.4	51.24	22	38.6	57	100.0	3.40		
Total.....	4.9	3.7	39	20.5	64.10	75	39.5	76.68	76	40.0	190	100.0	17.11		
\$1,000 and under \$1,100:															
White.....	4.5	3.5	29	22.8	92.25	36	28.3	68.24	62	48.8	127	100.0	\$1.72		
Colored.....	5.5	3.7	9	24.3	77.44	8	21.6	77.37	20	54.1	37	100.0	2.11		
Total.....	4.7	3.5	38	23.2	88.74	44	26.8	69.90	82	50.0	164	100.0	1.81		
\$1,100 and under \$1,200:															
White.....	5.1	3.9	27	23.5	90.84	38	33.0	111.00	50	43.5	115	100.0	15.35		
Colored.....	5.7	3.5	2	10.5	45.50	4	21.1	140.50	13	68.4	19	100.0	24.79		
Total.....	5.2	3.9	29	21.6	87.72	42	31.3	113.81	63	47.0	134	100.0	16.69		
\$1,200 and under \$1,300:															
White.....	4.9	3.9	45	27.3	114.82	48	29.1	81.99	72	43.6	165	100.0	7.47		
Colored.....	5.8	3.7	4	33.3	237.55	3	25.0	54.00	5	41.7	12	100.0	65.68		
Total.....	5.0	3.9	49	27.7	124.86	51	28.8	80.35	77	43.5	177	100.0	11.41		

TABLE 3.—FAMILIES WITH SURPLUS AND DEFICIT IN 1916, BY INCOME GROUPS—Con.

Income group.	Average size of family.		Families having—									All families.						
	Average size of family.	Average size of net family.	Surplus.			Deficit.			Neither surplus nor deficit.			Number.	Per cent.	Average surplus.	Average deficit.			
			Number.	Per cent.	Average amount.	Number.	Per cent.	Average amount.	Number.	Per cent.								
\$1,300 and under \$1,400:																		
White.....	5.3	4.1	42	36.5	\$108.42	30	26.1	\$90.35	43	37.4	115	100.0	\$16.03					
Colored.....	6.2	4.2	4	44.4	122.86	3	33.3	226.38	2	22.2	9	100.0				\$20.85		
Total.....	5.4	4.1	46	37.1	109.68	33	26.6	102.71	45	36.3	124	100.0	13.35					
\$1,400 and under \$1,500:																		
White.....	5.0	4.0	42	35.0	143.96	41	34.2	125.86	37	30.8	120	100.0	7.38					
Colored.....	7.0	5.4	1	20.0	200.00				4	80.0	5	100.0	40.00					
Total.....	5.1	4.1	43	34.4	145.27	41	32.8	125.86	41	32.8	125	100.0	8.69					
\$1,500 and under \$1,600:																		
White.....	4.8	3.7	46	45.5	149.03	21	20.8	164.22	34	33.7	101	100.0	33.73					
Colored.....	5.4	3.4	5	62.5	158.80	1	12.5	110.00	2	25.0	8	100.0	85.50					
Total.....	4.8	3.7	51	46.8	149.99	22	20.2	161.75	36	33.0	109	100.0	37.53					
\$1,600 and under \$1,700:																		
White.....	5.6	4.2	33	47.8	176.76	13	18.8	127.00	23	33.3	69	100.0	60.61					
Colored.....	6.0	5.2	2	33.3	54.00	2	33.3	70.20	2	33.3	6	100.0				5.40		
Total.....	5.6	4.2	35	46.7	169.74	15	20.0	119.43	25	33.3	75	100.0	55.33					
\$1,700 and under \$1,800:																		
White.....	5.3	3.7	25	47.2	246.82	12	22.6	145.77	16	30.2	53	100.0	83.42					
Colored.....	3.0	2.0							1	100.0	1	100.0						
Total.....	5.3	3.6	25	46.3	246.82	12	22.2	145.77	17	31.5	54	100.0	81.87					
\$1,800 and under \$1,900:																		
White.....	5.3	3.9	30	51.7	190.02	9	15.5	239.07	19	32.8	58	100.0	61.19					
Colored.....	6.0	6.0	1	100.0	230.00						1	100.0	230.00					
Total.....	5.3	3.9	31	52.5	191.31	9	15.3	239.07	19	32.2	59	100.0	64.05					
\$1,900 and under \$2,000:																		
White.....	6.1	4.2	19	65.5	261.35	3	10.3	101.43	7	24.1	20	100.0	160.74					
Colored.....																		
Total.....	6.1	4.2	19	65.5	261.35	3	10.3	101.43	7	24.1	20	100.0	160.74					
\$2,000 and under \$2,100:																		
White.....	5.5	4.0	13	76.5	287.82	2	11.8	357.50	2	11.8	17	100.0	178.04					
Colored.....	4.0	4.0	1	100.0	204.00						1	100.0	204.00					
Total.....	5.4	4.0	14	77.8	281.83	2	11.1	357.50	2	11.1	18	100.0	179.48					
\$2,100 and under \$2,200:																		
White.....	7.4	4.4	7	38.9	237.98	3	16.7	109.60	8	44.4	18	100.0	74.28					
Colored.....	8.0	5.0							1	100.0	1	100.0						
Total.....	7.4	4.4	7	36.8	237.98	3	15.8	109.60	9	47.4	19	100.0	70.37					
\$2,200 and over:																		
White.....	6.7	4.3	13	50.0	542.83	5	19.2	29.87	8	30.8	26	100.0	265.67					
Colored.....																		
Total.....	6.7	4.3	13	50.0	542.83	5	19.2	29.87	8	30.8	26	100.0	265.67					
All groups:																		
White.....	4.9	3.8	447	30.2	150.46	429	29.0	103.58	605	40.9	1,481	100.0	15.41					
Colored.....	4.8	3.5	73	11.6	80.95	197	31.3	55.69	359	57.1	629	100.0				8.05		
Total.....	4.9	3.7	520	24.6	140.70	626	29.7	88.51	964	45.7	2,110	100.0	8.42					

DOPE POISONING IN THE MANUFACTURE OF AIRPLANE WINGS.¹

BY ALICE HAMILTON, M. D., UNITED STATES BUREAU OF LABOR STATISTICS.

For the most part the making of airplanes is not a dangerous trade, in the sense of involving the risk of occupational poisoning, for it is chiefly woodwork and upholstering, but there is one stage in the preparation of the linens used to cover most of the surface of the structure which is attended with risk of poisoning. This is the use of so-called dope to tighten up the linen, and make it durable and waterproof. At present, the base of dopes used for airplanes is a cellulose compound, either the nitrate or the acetate. The work of experimentation is being carried on and it may easily be that some other compound will come into use shortly, but at present it is safe to say that airplane dopes are cellulose acetate or nitrate dopes. Cellulose acetate and nitrate are both quite free from poisonous properties, but their solvents are not. A study of the risks involved in airplane manufacture resolves itself into a study of dope solvents.

Cellulose acetate is relatively noninflammable, a great advantage. It dissolves best in tetrachlorethane, or acetylene tetrachloride, $C_2H_2Cl_4$. So far as I have been able to ascertain, all cellulose acetate dopes in this country are tetrachlorethane dopes, supplemented usually by varying quantities of acetone or other ketones, and by methyl alcohol and benzol. Analyses made by the Bureau of Standards show that American acetate dopes contain from 20 to 63 per cent of tetrachlorethane.

It was tetrachlorethane that first called attention to the airplane industry as a dangerous trade. Almost simultaneously in Germany and England articles were published in medical journals describing a new and mysterious disease, an acute, severe, sometimes fatal degeneration of the liver, which had appeared among men engaged in doping airplane wings. This was in 1914. Early in the following year we ceased to get reports from Germany, but the English record has been published with great regularity and frankness, and lies before us for warning and guidance.

The first German report came from a works in Johannisthal, where four out of a force of eight dopers were affected with jaundice of a severe type, and one died. They had been applying a dope containing 60 per cent tetrachlorethane, spraying it on as well as painting, and the work was done in a poorly ventilated room. This occurrence was followed by other similar accidents in German airplane works. In one, 10 men were poisoned and one died; in another, all but one of 15 dopers had been sick, and that one had been at work only two months. One author collected the histories of 18

¹ Paper submitted to the Government section of the National Safety Council, Sept. 14, 1917.

cases of this so-called toxic jaundice among the dopers in German factories. He says that after the appearance of these cases two of the Johannisthal factories gave up the use of acetate dopes, but even so, a case developed four months later, an instance of long latency in a poison, a phenomenon which has been observed also among the victims.

These German dopes were analyzed and found to contain from 40 to 84 per cent of tetrachlorethane. In one district, the use of these dopes was temporarily suspended pending further inquiry, and the experts who had made the analyses and had tested the substance on animals, strongly advised prohibition of tetrachlorethane in dope, but we have no means of knowing whether this was carried out. If it was not, there has probably been a great deal of serious occupational poisoning in German airplane manufacture during these years of intense activity.

In England the experience has been much the same, ending in practical prohibition of tetrachlorethane dopes and the substitution of safer ones. In England, as in Germany, the first case of toxic jaundice in a doper came as a surprise and was inexplicable to the physicians. It was not until the senior scientific analyst of the Home Office had subjected all the compounds found in the dope to animal tests that it was discovered which one was responsible. Benzol, wood alcohol, and acetone were present as well as tetrachlorethane, but only the last was capable of setting up in animals the changes in the liver which had been found in the human case.

Much attention was aroused by this first death from airplane dope, and not long after it was followed by three others, all of women. A fifth victim, an old man, died early in 1916, and in February of that year toxic jaundice was made a notifiable disease and brought under the Workmen's Compensation Act. A question asked in the House of Commons elicited the statement from the Home Office that there had been up to that time 43 known cases of toxic jaundice in dopers, with 7 deaths, 5 of them of women. The Government was said to be working to discover a substitute for tetrachlorethane, and pending that, strict regulation of the works was enforced—down suction to carry off the heavy fumes, since the plenum system of ventilation resulted only in scattering the dangerous vapors all over the room; separation of doping from all other processes; all doping including taping, to be done in one room; the air in this room to be changed 30 times an hour; all dopers to be examined once a fortnight by a physician. As small an amount as 10 per cent of tetrachlorethane was said to be dangerous.

In August, 1916, a representative of the War Office and of the Admiralty was able to state in the House of Commons that considerable progress had been made in the production of satisfactory non-

poisonous dopes, and that the Admiralty and War Office had issued instructions to contractors specifying some seven or eight such dopes which were satisfactory to them. The result was that, as Dr. T. M. Legge, chief medical inspector, and Sir Thomas Oliver both wrote me, by the beginning of this year tetrachlorethane dopes were no longer in use for Government work in Great Britain.

I do not wish to go into details as to the effects of this compound on animals and on human beings, but just to sketch rapidly a picture of what may be expected in a factory where such dopes are used without sufficient ventilation. The only type of poisoning recognized at first was the gastric type, eventuating in jaundice, but after the institution of regular medical inspection other types were discovered. Koelsch, one of the German observers, distinguished two forms especially; cases having pronounced gastric symptoms, nausea, vomiting, abdominal cramps, enlarged liver and jaundice, and cases with slight abdominal symptoms or none at all, but with nervous disturbances of various kinds, headache, sensations of crawling and pricking, trembling hands, reflex disorders, slight paralysis. Two cases of the gastric type were diagnosed as lead colic, though there was no exposure to lead at all. Sometimes men complained of increased appetite for food coincident with a loss of weight. Drowsiness was a very common symptom, persisting all through the working hours.

Lehmann, the greatest authority on the poisonous industrial gases, found that if there were not more than one or two milligrammes of tetrachlorethane to a liter of air, animals could tolerate it for many days with no more serious symptoms than loss of weight and drowsiness, but that if the strength of the fumes were increased, the animals showed symptoms like those following chloroform inhalation, only tetrachlorethane is four times as toxic as chloroform. It is nine times as toxic as carbon tetrachloride (tetrachlormethane). The fatty degeneration of the liver caused by it is more intense than that caused by any known poison except phosphorus. Along with this degeneration go changes in the kidneys and in the heart muscle.

I have gone so thoroughly into the subject of tetrachlorethane poisoning because it is the most important of the constituents of airplane dope, from the aspect of industrial poisoning. I suppose it is also important in other industries, in rubber work, perhaps, and in the making of noninflammable films, lacquers, artificial silk, and fire-proof fabrics. This is only hearsay. I do not know of my own experience anything about its use in these industries, and I should be very grateful for information. According to German authorities, the manufacture of the compound is not attended with the risk that accompanies its use.

Cellulose nitrate dopes do not contain this solvent. The substance that bears the relation to cellulose nitrate that tetrachlorethane bears to cellulose acetate is acetone. Mixed with it may be amyl acetate, methyl, ethyl and amyl alcohol, benzol, and various ketones. Acetone seems to be looked on as a poison by some chemists and manufacturers. I have often been told that it is more dangerous than wood alcohol, and even than tetrachlorethane. There is really no evidence that it is a dangerous substance in industry, either inhaled or absorbed through the skin. The great German authority on poisons, Kobert, could not find a case on record of industrial poisoning from it and believes such an occurrence to be almost impossible. Koelsch, an industrial physician, looked into the question from that point of view and found no proof of bad effects from its use. I came across acetone in the powder industry, for it is one of the solvents used in making smokeless powder. The men using it looked on it as quite harmless, and so did the physicians in charge of them.

The solvent next in importance for cellulose nitrate is amyl acetate, known to the workmen as banana oil, and quite heartily disliked by them. It has a sickeningly sweet, cloying odor, and an irritating effect on the eyes and throat. For these reasons workmen are likely to attribute to it all the ill health that they experience as a result of using solvents containing it, though there may be present much more powerful poisons, such as methyl alcohol and benzol. I have heard many physicians make the same mistake, of holding amyl acetate responsible for symptoms due to other substances. Several of them, and several foremen also, have told me that amyl acetate was much worse than tetrachlorethane and that they could not make their men use nitrate dopes because of the irritation caused by it.

As a matter of fact, amyl acetate is poisonous, but only slightly so, while tetrachlorethane, though it does not make the eyes water and set up an irritating cough as does banana oil, is a subtle and dangerous poison to liver, heart, and kidneys. Amyl acetate has been elaborately tested by Lehmann and Koelsch, both of whom used human beings, as well as animals, for experimentation. Briefly stated, workers using amyl acetate may be expected to complain of smarting and running eyes, dryness in the throat, tight feeling in the chest, inclination to cough continually. More rarely they may feel drowsy and tired and vaguely nervous, the feeling which they sum up under the term "dopy." Such symptoms as headache, vomiting, gastric distress, do not seem to be characteristic effects of amyl acetate. Nor have we so far any proof of chronic organic disturbances in human beings as a result of long-continued exposure to it, though experiments on animals point to the possibility of such occurrences.

It is evident, therefore, that cellulose acetate dope, with tetrachlorethane as a solvent, is far more dangerous than cellulose nitrate dope with acetone or amyl acetate as a solvent.

Both kinds of dope may contain methyl alcohol, amyl alcohol, and benzol. None of these is as poisonous as tetrachlorethane when used in the quantities present in dopes, but all are volatile poisons. Benzol is the most powerful. In studying the explosives industry I came across some 14 cases of severe benzol poisoning, 7 of which were fatal, and many mild cases had doubtless occurred which were not considered important enough to be recorded. All of these were caused by benzol fumes and sometimes the fumes were not very heavy. I happened to be in a factory for the synthetic preparation of carbolic acid when a benzol recovery tank overflowed and the benzol ran out on the floor. It was less than two minutes before I was dazed and my head was swimming so that I was glad to stagger out into the air and sink down on the first handy keg to get over it. It causes, in mild cases, dizziness; roaring in the ears; excitement like that of alcoholic intoxication, sometimes angry, sometimes foolish; and it is followed by the same sense of discomfort and depression that comes after a bout of drinking. There is also a chronic benzol poisoning, which has been observed especially in rubber workers, with anemia, disturbed digestion, loss of weight, loss of appetite, tendency to early fatigue, vague nervous symptoms, and increased susceptibility to infections.

As to methyl alcohol—wood alcohol—I think there is more confusion as to its dangerousness than there is with regard to that of any other substance used in industry. It seems to be a question that even scientific chemists and sanitarians find difficult to approach with an impartial mind. Fortunately we have some really authoritative data on which to depend, and we can say with certainty that methyl alcohol is poisonous and produces very characteristic effects, and that it is the methyl alcohol itself that produces them, not the impurities commonly present in the commercial variety. We can also say with certainty that it is possible to produce severe and even fatal poisoning by the fumes alone. Inhalation of fumes is the usual way by which wood alcohol poisoning is brought about in industrial cases.

In human beings the most striking effect of methyl alcohol is on the eyes, and this effect is more constant and more characteristic than is the effect of almost any poison. There is first an inflammation of the lids, which may become purulent, or the first symptom noticed may be a blurring of vision which passes away after the workshop is left. The field of vision is contracted, especially for certain colors, and there are dark spots before the eyes. Total blind-

ness, usually transient, sometimes permanent, may result from exposure to heavy fumes of methyl alcohol. Together with these eye symptoms usually go headache, feeling of weariness, of weakness, pain in the stomach, dizziness, perhaps staggering gait, confusion, and roaring in the ears, but seldom loss of consciousness. Severe cases of poisoning would not probably follow such exposure as would be found in doping airplanes, for the quantity of methyl alcohol used is not great enough.

It is a question, however, what proportion of wood alcohol constitutes a dangerous amount. Our denatured alcohol usually contains about 4 per cent and is supposed to be harmless, but the German contains only 2 per cent, and yet German workmen petitioned the Reichstag to have a governmental inquiry made into the impairment of health which they insisted followed the use of denatured alcohol in industry. Individual susceptibility to methyl alcohol varies much, a fact which helps to add to the confusion concerning its effects.

Amyl alcohol—fusel oil—is, according to Salant, from four to seven times as toxic to animals as is ethyl alcohol, is more rapid in its action, and causes a more decided fall of blood pressure.

These are the important compounds used in airplane dopes, and, as is seen, they are all volatile poisons—except possibly acetone—and all capable of absorption through the skin and lungs, as well as the stomach. It follows, then, that men who handle these dopes must, if they are to be protected from poisoning, work in well-ventilated quarters. They must not be overexposed by too long hours, and they must be watched by some one who is capable of recognizing the signs of poisoning. Such precautions are doubly necessary when cellulose acetate dope is used, though it is well to remember that the English have thought best to continue their drastic rules for doping rooms even though they have changed to the nitrate dopes.

In the course of an investigation made for the Bureau of Labor Statistics I visited some eighteen airplane works in nine States. Some were tiny places employing one man for part time in doping; most were employing two or three dopers, and three were large enough to employ more than 10. Only five were using acetate dope with tetrachlorethane as solvent. At the time of my visits, between April and July of this year, conditions in these doping rooms were for the most part fair—rarely bad, rarely excellent. This was, however, during pleasant, cool weather. In winter, when windows are closed, or on heavy, humid, hot summer days, the impression given would not be so favorable. However, there were not more than two plants so small and crowded as to make severe poisoning at all likely, and these were not working at full capacity, so that doping was done only now and then.

Usually, natural ventilation is depended on in these plants, but some of the larger ones have installed various systems of mechanical ventilation, more or less efficient. Even when nitrate dopes are used, natural ventilation is not enough. There should be some method of sending the air in from above and drawing it off from below, for the more dangerous solvents are heavier than air. It is well to remember that a man who faints and falls to the ground in a doping room is falling into air more heavily laden with the poison than that which he was breathing before.

I did not find any evidence of serious poisoning in our airplane works. I did not even hear of a case of toxic jaundice, though this is not proof that none has occurred. American physicians had no reason to suspect, till recently, that such a disease might be caused by work in an airplane shop, and they would not have thought toxic jaundice in a doper had anything to do with this occupation. Still, I doubt very much that there have been any such cases. I did find instances of men who used this kind of dope being temporarily overcome by the fumes. Once, for instance, on a hot day and in an unventilated room, a man tipped over his dope can and spilled some of the dope over his clothes, stooped to pick up the can but lost consciousness and fell, and his fellow workman who went to help him also fainted away. They were both revived by artificial respiration administered in the open air, but the first one did not come to till after his dope-soaked clothes had been removed. The physician in charge could not see that any ill effects followed the poisoning, beyond some malaise for a few days. The slower, more deadly form, toxic jaundice, he had never seen.

In view of the comparative newness of this industrial poison, it may be well to describe the symptoms as they were related to me by dopers, even if the type of illness described was slight. Drowsiness, especially in hot weather, was mentioned more often than any other symptom, more troublesome on going to work, passing away as the day wears on, but sometimes returning when the man leaves the shop for the open air. Some men fall asleep as soon as they reach home. It is worse after a holiday. Faintness, sufficient to make the man quit work, was usually due to overexposure to fumes, or to exceptionally hot and humid weather. One man had lain down under a wing to paint it, and of course the fumes fell into his face. Another was working in an old greenhouse with many drying wings stacked close around him and the sun beating on the glass roof. But of chronic symptoms, caused by long exposure, I heard nothing.

This was true also of the men using nitrate dope, and here there was less complaint of nervous symptoms. Itching eyelids, running

eyes, headache, slight nausea, cold hands and feet, and dry throat were complained of most often by these men.

The Bureau of Statistics and Information of the New York State Industrial Commission, in its bulletin for June of this year, published a report of the inquiry into the danger of the airplane industry from a hygienic standpoint.¹ The investigators were Dr. Lester Roos and Dr. Rosalie Bell, who visited eight factories in the State, three of which were very small, the other five employing from 5 to 40 dopers. Two were using tetrachlorethane dopers. They examined 52 dopers, and found some disturbance in health in 35. In some it was very slight, but in about 26 there were definite symptoms referable to the central nervous system, the gastrointestinal or the urinary organs. Jaundice was observed in two men, one using tetrachlorethane dope, the other amyl acetate-acetone dope. Several men had attacks of faintness and even loss of consciousness, and a greater number of these were using acetate dope than nitrate dope. No characteristic case of tetrachlorethane poisoning was found.

There are several reasons why our dopers have escaped the troubles suffered by the English and Germans. In the first place, they have never been exposed to dope poisoning for a long time continuously. I found that out of 53 dopers only 5 had worked as long as a year, and only 13 for more than six months; 17 had been doping for less than a month, 12 for one to three months, and 11 for three to six months. Even in this short working time, they had usually been exposed intermittently only, perhaps a few hours out of the day, perhaps two or three days in the week. This is the principal reason why we have had so little dope poisoning. Another is to be found in the fact that much of the doping has been done up to now in the open air. Doping rooms are being built now, but sheds or the yard were formerly the rule. There were few wings in process of doping, few stacked about in process of drying, and few men doping at the same time, so that the fumes were not heavy. All these conditions are changing, and unless we take care we may yet see cases of toxic jaundice in our airplane works.

Fortunately nitrate dopers are increasing in popularity and are supplanting acetate dopers in the majority of factories. They are not, however, free from danger, and indeed the danger may prove to be greater than we now know. In using nitrate dopers we shall be carrying on a human experiment in the effects of amyl acetate, benzol, methyl alcohol, acetone and other ketones, which may show results quite unexpected. For the sake of the dopers let us hope that this experiment may turn out negatively, but it will not unless doping is managed with intelligence, knowledge, and care.

¹ A brief digest of this article appeared in the MONTHLY REVIEW for August, 1917, pp. 88, 85.

LABOR AND THE WAR.

PLANS FOR ADJUSTMENT OF DISPUTES IN SHIPYARDS AND IN LOADING AND UNLOADING SHIPS.

BOARD TO SETTLE DISPUTES IN SHIPYARDS HANDLING GOVERNMENT CONTRACTS.

Early in August the Council of National Defense announced the creation of a commission to adjust labor disputes in plants handling Government contracts, this commission to be composed of three representatives of the Government, three representatives of employers, and three representatives of employees.¹ The personnel has not yet been appointed. It has been thought advisable, however, to provide for the adjustment of labor disputes in shipyards throughout the country by the appointment of a separate commission made up of representatives of the Navy Department, the Emergency Fleet Corporation, and the American Federation of Labor. Accordingly, on August 20 an agreement was entered into by Government officials and labor chiefs, among whom are the presidents of the great international unions, under the terms of which disputes concerning wages, hours, or conditions of labor in the construction of shipbuilding plants or of ships may be speedily and satisfactorily adjusted without interruption of production necessary to the national defense. This commission is composed of V. Everit Macy, New York, president of the National Civic Federation, chairman, named by the President; A. J. Berres, Washington, secretary-treasurer of the Metal Trades Department, American Federation of Labor, appointed by Mr. Gompers; and E. F. Carry, Chicago, president of Haskell-Barker Car Co., designated by the Emergency Fleet Corporation. Where Navy work is in whole or in part concerned, the Assistant Secretary of the Navy, F. D. Roosevelt, will sit as a member of the board, and when trouble on a large scale is threatened in private shipyards, a representative of local labor and one of local shipping interests will sit as members of the commission, with full voting powers. In the event of a tie, when Assistant Secretary Roosevelt's presence raises the membership to four, the deciding vote will be cast by the Secretary of War as chairman of the Council of National Defense. The agreement is as follows:²

¹ An account of the appointment of this commission was given in the September, 1917, number of the MONTHLY REVIEW, pp. 71 to 73.

² Official Bulletin for Aug. 25, 1917.

"When disputes arise concerning wages, hours, or conditions of labor in the construction or repair of shipbuilding plants or of ships in shipyards under the United States Shipping Board Emergency Fleet Corporation, or under said Shipping Board, or under contract with said corporation or with said board, adjustment of such disputes shall be subjected to an adjustment board of three persons, hereinafter called "the board," to be appointed by the United States Shipping Board Emergency Fleet Corporation, one to represent the said corporation, one to represent the public and to be nominated by the President of the United States, and one to represent labor, the last to be nominated by Samuel Gompers. Two persons shall be so nominated by Samuel Gompers—one from the metal trades to sit when the matter under consideration concerns construction of shipyards or steel ships, and one from among the trades primarily concerned to sit when the matter under consideration has reference to wooden hulls. Where such matter concerns wages, hours, or conditions applying to the production of both kinds of ships, only one of the two said nominees representing labor shall sit on said board, the question as to which of such nominees is to sit to be determined between them, or in the event of their disagreement to be determined by Samuel Gompers. When matters concerning any plant or plants are before the board, it shall invite a person representing and designated by the owner or owners of such plant or plants, and also a person representing, or selected by, the majority of the workers in the particular craft or crafts directly interested in the disputed matters—both of said representatives to sit with voting power as associate members of said board in connection with such matters.

"If a question coming under the jurisdiction of the board arises with reference to such construction in a private plant in which construction is also being carried on for the Navy Department, the Secretary of the Navy, or such person as he may designate, shall sit with voting power as a member of the board. In the event of a tie vote, when the board is so constituted, the decision shall be referred to the chairman of the Council of National Defense, or to such person as he may designate. This memorandum shall in no way serve as a precedent for procedure in Government plants under the War or Navy Departments.

"The plants where such construction is being carried on shall be geographically districted by the board. In each district, the contractors in whose plants such construction is being carried on, and the representatives of such international labor organizations as have members engaged in such production or construction in such plants, and as are selected for the purpose by the labor member of the board, shall be called upon, under conditions to be laid down by it, to agree

upon a person or persons who shall act under the direction of the board as examiner or examiners in such district. If the board does not succeed in having an examiner so selected, then the board shall by unanimous action select a person or persons for such position. The examiner shall be subject to removal by the board at any time by unanimous vote.

“It shall be the duty of the district officer of the United States Shipping Board Emergency Fleet Corporation to report promptly to the board any dispute with reference to wages, hours or conditions of labor which he is unable to adjust satisfactorily to the principals concerned; but the board will take cognizance of such dispute when information concerning it comes from any source whatsoever. Before the district officer shall refer such dispute to the board, he shall confer with the local spokesmen or representatives of such crafts as are involved in such disputes, or with such authorized heads of any local labor organizations interested therein as may be designated by the labor member of the board, or on their request with the national head or heads of such organization or organizations or his or their duly authorized representative or representatives. When it appears to the board that such dispute can not be so adjusted, it will promptly send an examiner for said district to such plant to bring about mutually satisfactory adjustment, the terms of which shall, if they receive the approval of the examiner, be in a report submitted by him to the board for its ratification. If the examiner does not succeed in bringing about such adjustment, he shall in his report to the board, recommend terms of adjustment. The board, after due consideration and such investigation as may seem necessary, shall decide the questions at issue.

“As basic standards with reference to each plant where such construction is being carried on, the board shall use such scales of wages and hours as were in force in such plant on July 15, 1917, and such conditions as obtained on said date in such plant. Consideration shall be given by the board to any circumstances whatever arising after such wages, hours, or conditions were established, and which may seem to call for changes in wages, hours, or conditions. The board shall keep itself fully informed as to the relation between living costs in the several districts, and their comparison between progressive periods of time. The decisions of the board shall, under proper conditions, be retroactive, in which case accounting such as may be proper shall be made in accordance with the directions of the board. The decisions of the board will, in so far as this memorandum may be capable of achieving such result, be final and binding on all parties; but at any time after six months have elapsed following any such ratified agreement or any such final decision by

the board of any question as to wages, hours, or conditions in any plant, such question may be reopened for adjustment upon the request of the majority of the craft or crafts at such plant affected by such agreement or decision."

COMMISSION FOR ADJUSTING LABOR DISPUTES IN LOADING AND UNLOADING SHIPS.

In order to assure the dispatch of vessels from our ports, to which end it may be necessary to adjust disputes and grievances over wages and conditions of labor without strikes or lockouts, a plan was agreed upon during the latter part of August which has the approval of the United States Shipping Board, the Secretary of War, the International Longshoremen's Association, the Secretary of Labor, the president of the American Federation of Labor, and the chief shipping operators, providing for the appointment of a national commission to consider and adjust all disputes arising in connection with the loading or unloading of vessels at the Atlantic, Gulf, and Pacific coast ports. This commission consists of Walter Lippman, representing the War Department; T. V. O'Connor of Buffalo, representing the International Longshoremen's Association; vice-chairman R. B. Stevens, representing the Shipping Board; and P. A. S. Franklin and H. H. Raymond, appointed by the committee on shipping of the Council of National Defense, the former to act in all cases involving foreign trade and the latter in cases involving coastwise trade. As to the duties of this commission and the plan of operation, the United States Shipping Board has made the following announcement:

"The national commission will appoint in each important port a local adjustment commission made up of one member to represent the Shipping Board and the War Department, one nominated by the longshoremen's association, and one nominated by the carriers.

"Any dispute which can not be settled by the local commission will have to be referred to the national commission. The union scale of wages, hours, and conditions in each port shall be adopted as the standard. The decision of the national commission shall be binding on all parties, and in all cases work shall continue without interruption, pending the action of any local commission or the decision of the national commission.

"The Government feels confident that this agreement provides a fair method for the adjustment of wages and conditions of labor, and that the work of loading and unloading vessels will proceed without strikes and lockouts during the period of the war."

STANDARDS OF LABOR IN THE MANUFACTURE OF ARMY CLOTHING IN THE UNITED STATES.

Secretary Baker of the War Department announced in September the establishment of a board of control for labor standards in Army clothing, under the chairmanship of Mr. Louis E. Kirstein, of Boston. The other two members are Mrs. Florence Kelley, general secretary of the National Consumers' League, New York, and Capt. Walter E. Kruesi, Quartermaster Corps, United States Reserves. It is intended that through this board the Quartermaster General will be enabled to enforce the maintenance of sound industrial and sanitary conditions in the manufacture of Army clothing, to inspect factories, to see that proper standards are established on Government work, to pass upon the industrial standards maintained by bidders on Army clothing, and to act so that just conditions prevail. The appointment of this board was the result of complaints of unfavorable labor conditions surrounding the manufacture of clothing for the men in the Army.

On August 18 the committee submitted its preliminary report to the Secretary of War and recommended among other provisions that—

“The contract should include the provisions of the eight-hour law of June, 1912; a provision for equal pay for equal work without distinction of sex or race; a provision that the contractor will enter into collective bargaining arrangements with his employees; will pay the prevailing or standard rate of wages; will employ no labor of any persons under the age of 16; will strictly comply with local labor laws and complete the manufacture of the garments under the factory system in premises used for clothing production under his own control, which premises have been previously inspected and approved by an agent of the Government.

“The plan for letting the contracts should include careful consideration, by a central authority, of the normal location of the trade, the capacity, and the equipment of manufacturers. As far as practicable, the contracts should be let proportionately in the established centers of the industry with an avowed preference for—

“(a) Manufacturers who operate under collective agreements which include machinery for adjustment of grievances with labor organizations, and

“(b) Manufacturers who have a good record for compliance with the local labor laws.”

New clauses to be inserted in the contract for the manufacture of Army clothing were drawn up with the assistance of Mr. Preston Davis, counsel for the Council of National Defense. These received the approval of the Secretary of War and the Quartermaster General

and are now in effect. The War Department asserts that these provisions assure a fair wage and proper working and sanitary conditions, provide the necessary means for enforcing those conditions, and also assure a fair rate for the contractor. It is believed that it carefully carries out the duty of the Government to assure just conditions for the manufacture of Army clothing. In announcing this activity of the board of control for labor standards, the War Department said:

The grievances which have arisen in the past in connection with the performance of clothing contracts will be entirely removed by the enforcement of this contract, and decent industrial standards not only established but also enforced by the Government. The department feels there will be no justification for any delay hereafter in the delivery of clothing for our soldiers.

The following are the new clauses affecting labor conditions which have been inserted in the contract:

6-a. No laborer or mechanic doing any part of the work contemplated by this contract, in the employ of the contractor, or any subcontractor contracting for any part of said work contemplated, shall be required or permitted to work more than eight (8) hours in any one calendar day upon such work, prohibition being in accordance with the act approved June 19, 1912, limiting the hours of daily service of mechanics and laborers on work under contracts to which the United States is a party. For each violation of the requirements of this article, a penalty of five dollars (\$5) shall be imposed upon the contractor for each laborer or mechanic for every calendar day in which said employee is required or permitted to labor more than eight (8) hours upon said work, and all penalties thus imposed shall be withheld for the use and benefit of the United States; provided, that the above proposition shall not be enforced nor shall any penalty be exacted in case such violation shall occur while there is in effect any Executive order suspending the provisions of said act approved June 19, 1912, or waiving the provisions and stipulations thereof with respect to either this contract or any class of contracts in which this contract shall be included, or when the violation was due to any extraordinary event or conditions of manufacture, or to any emergency caused by fire, famine, or flood, by danger to life or property, or by other extraordinary events or conditions on account of which, by subsequent Executive order, such past violation shall have been excused.

It is agreed that the contractor, in doing any part of the work contemplated by this contract, and any subcontractor contracting for any part of said work, shall comply with the provisions of the Naval Appropriation Act approved March 4, 1917, and the Executive order of the President of the United States dated March 24, 1917, in respect to the wages of persons employed upon contracts with the United States, so long as said act approved March 4, 1917, or said Executive order dated March 24, 1917, shall be in force and effect.

6-b. *Compliance with State labor laws.*—All work done in the performance of this agreement shall be done in full compliance with all of the laws relating to conditions of labor, places of labor, hours and compensation of labor, in effect in the State where said work, or any part thereof, shall be performed. Failure of the contractor to comply with such laws shall entitle the Government, at its option, to cancel this agreement. In such case, only articles delivered and accepted by the Government up to the day of such cancellation shall be paid for.

6-c. *Labor disputes.*—In the event that labor disputes shall arise directly affecting the performance of this contract and causing or likely to cause delay in making deliveries upon the date or dates specified, the contractor shall address a written statement thereof to the contracting quartermaster, or his successor, for transmission to the Secretary of War with the request that such dispute be settled, providing such information and access to information within the control of the contractor as the Secretary of War shall require, and it is stipulated and agreed that the Secretary of War may thereupon settle or cause to be settled such dispute.

6-d. The contractor shall enter into collective bargaining arrangement with his employees.

6-d. *Alternative.*—Employees shall not be refused the right by the contractor of appointing a representative from their number to present to the contractor any matters that they may wish to bring to his attention. The refusal of the contractor to afford such representative or representatives an opportunity of conferring with him, shall entitle the Government, at its option, to cancel this agreement.

6-e. *Minimum wage scale.*—In the performance of this agreement, all work done by garment workers, operatives, or laborers shall be paid for by the contractor at not less rates than those prescribed by the board of control for labor standards in Army clothing of the War Department appointed by the Secretary of War on the 24th day of August, 1917: *Provided*, That if such rates shall be changed by said board during performance of this agreement, compensatory adjustments shall be made for the benefit of the contractor in the event such rates are increased; compensatory adjustments shall reciprocally be made for the benefit of the Government in the event such rates are reduced.

The contractor shall, when required, display prominently in all premises where work is done in the performance of this contract, signs in the form prescribed by said board for the purpose of advising said garment workers, operatives, and laborers of the fact that the contractor is obligated not to pay less than said minimum wages prescribed by said board.

6-f. *Licensing of premises, and sanitary inspection.*—All premises where any work is performed in carrying out this agreement must be sanitary. The contractor, prior to commencing any work under this agreement, must submit to the contracting quartermaster a statement in writing showing the location of all premises where any part of the work to be performed under this agreement is to be carried on and no work shall be carried on in any premises until the contractor shall have obtained from the contracting quartermaster, or authorized inspecting officer, a certificate to the effect that such premises are sanitary and suitable for the production, under sanitary conditions, of articles hereby contracted to be made. The decision of the contracting quartermaster or authorized inspecting officer, as to the suitability of premises designated by the contractor, shall govern; providing, that if the contractor considers the decision of the contracting quartermaster, or authorized inspecting officer, unjust, he may within five (5) days appeal in writing from the latter's decision to the quartermaster general, whose decision shall be final. Pending such appeal, the Government shall not be obligated to accept any clothing made on any premises not licensed in accordance with the foregoing. The contractor shall also take any steps required by the contracting quartermaster, or authorized inspecting officer, subject to the appeal of the quartermaster general, whose decision shall be final, to make premises where any part of the work hereby contracted for is carried on, sanitary. Failure of the contractor to obtain a license or to take the necessary steps to make premises sanitary in accordance with the foregoing, shall entitle the Government, at its option to cancel

this agreement. In such case, the Government shall be obligated to pay only for articles delivered and approved after inspection up to the date of such cancellation.

6-g. Articles contracted for under this agreement shall be marked and distinguished with the name of the contractor in such manner as the Secretary of War may direct unless so marked or distinguished. The foregoing in accordance with the act of July 17, 1862 (R. S., 3731).

Notes to be added at the end of supply contract of quartermaster's department:

Attention of the contractor is called to the act of Congress of September 1, 1916, chapter 432, entitled "An act to prohibit interstate commerce in the products of child labor and for other purposes." Under this statute, no producer, manufacturer, or dealer shall ship or deliver in interstate or foreign commerce any article, commodity, or product made in any mill, workshop, factory, or manufacturing establishment in which children under the age of fourteen (14) years have been employed or permitted to work, or in which children between the ages of fourteen (14) and sixteen (16) years have been employed or permitted to work more than eight (8) hours in any one day or more than six (6) days in any week or after the hours of seven (7) post meridian or before the hour of six (6) antemeridian.

Attention of the contractor is also called to the act of July 17, 1862 (Revised Statutes, par. 373), which provides that no contract or any interest therein shall be transferred by the party to whom such contract or order, to which the United States is a party, is given to any other party and any such transfer shall cause the annulment of the contract or order transferred so far as the United States is concerned. All rights of action, however, for any breach of such contract by the contracting parties are reserved to the United States.

INDUSTRIAL UNREST IN GREAT BRITAIN.

[Reprinted from the Labor Gazette (London), August, 1917, p. 273.]

The reports of the commission of inquiry into industrial unrest have now been published. These reports are printed separately for the eight divisions of inquiry, viz, No. 1, Northeastern Area; No. 2, Northwestern Area; No. 3, Yorkshire and East Midlands Area; No. 4, West Midlands Area; No. 5, London and Southeastern Area; No. 6, Southwestern Area; No. 7, Wales and Monmouthshire; No. 8, Scotland.

The following is a summary of the reports, which was prepared by the Right Hon. G. N. Barnes, M. P., and addressed to the Prime Minister:

1. *Introductory*.—The commission of inquiry into industrial unrest, which was appointed by you on the 12th of June, has now completed its work. The terms of reference to the commission were "To inquire into and report upon the causes of industrial unrest and to make recommendations to the Government at the earliest practicable date." * * * The number of meetings held by the 8 commissions has varied from 10 to 30 in each case, and the

number of witnesses who have given evidence to each commission ranges from 100 to 200. Every effort has been made to carry out your instructions to the commissioners that their report should be issued within a period of one month. It has not, however, been found possible to carry out a full inquiry and submit a report in less than five weeks from the date of appointment. Whilst the limitation of time has to some extent narrowed the scope of the inquiry, it has also operated as a stimulus to everyone concerned to carry out the work with the utmost dispatch compatible with efficiency.

A comparison of the reports shows that there is a strong feeling of patriotism on the part of employers and employed throughout the country and they are determined to help the State in its present crisis. Feelings of a revolutionary character are not entertained by the bulk of the men. On the contrary, the majority of the workmen are sensible of the national difficulties, especially in the period of trial and stress through which we are now passing. Whilst the eight reports agree as to the main causes of industrial unrest, important differences appear in the emphasis laid by the various commissions upon specific causes.

In order that the principal points of agreement and difference between the eight reports may be readily seen, I submit the following brief summary of the commissioners' findings and recommendations:

(1) High food prices in relation to wages, and unequal distribution of food.

(2) Restriction of personal freedom, and, in particular, the effects of the Munitions of War Acts. Workmen have been tied up to particular factories and have been unable to obtain wages in relation to their skill. In many cases the skilled man's wage is less than the wage of the unskilled. Too much centralization in London is reported.

(3) Lack of confidence in the Government. This is due to the surrender of trade-union customs and the feeling that promises as regards their restoration will not be kept. It has been emphasized by the omission to record changes of working conditions under Schedule II, article 7, of the Munitions of War Act.

(4) Delay in settlement of disputes. In some instances 10 weeks have elapsed without a settlement, and after a strike has taken place the matter has been put right within a few days.

(5) Operation of the military-service acts.

(6) Lack of housing in certain areas.

(7) Restrictions on liquor. This is marked in some areas.

(8) Industrial fatigue.

(9) Lack of proper organization amongst the unions.

(10) Lack of communal sense. This is noticeable in South Wales, where there has been a breakaway from faith in parliamentary representation.

(11) Inconsiderate treatment of women, whose wages are sometimes as low as 13s. [\$3.16].

(12) Delay in granting pensions to soldiers, especially those in Class W Reserve.

(13) Raising of the limit of income-tax exemption.

(14) The workmen's compensation act. The maximum of £1 [\$4.87] weekly is now inadequate.

Universal causes of unrest—Food prices and distribution of supplies.—All the commissions put in the forefront as the leading cause of unrest the fact that the cost of living has increased disproportionately to the advance in wages, and that the distribution of food supplies is unequal. Commissioners are unanimous in regarding this as the most important of all causes of industrial unrest. Not only is it a leading cause of unrest in itself, but its existence in the minds of the workers colors many subsidiary causes, in regard to which, in themselves, there might have been no serious complaint; and the feeling exists in men's minds that sections of the community are profiting by the increased prices.

Operation of the Munitions of War Acts.—The operation of the Munitions of War Acts has undoubtedly been a serious cause of unrest, in particular the restriction upon a workman as regards the selection of his sphere of labor. If the leaving-certificate restriction is removed the leading cause of dissatisfaction under this heading will cease to exist. There will still remain, however, one element which is very important, because it projects itself into the after-war settlement. That is the complaint that sufficient attention is not being paid by employers to article 7 of Schedule II of the 1915 act [i. e., notice to and consultation with workmen when changes in working conditions are contemplated]. Changes of working conditions, more especially the introduction of female labor, have been made without consultation with the workpeople.

Operation of the military-service acts.—The reports show generally that the irritation occasioned by the withdrawal of the trade-card scheme within a few months of its initiation, and without any previous intimation, has now subsided. At the same time, much anxiety is occasioned by the working of the schedule of protected occupations, and the great majority of the reports emphasize the importance of the greatest care being exercised in the issue of red and black cards respectively, and in the proper treatment of the subject by the local officials intrusted with recruiting.

All the reports refer in general terms to what is called the want of coordination between Government departments dealing with labor;

but probably much of what is said on this head may have been written under a misconception and without a clear understanding of departmental administration. It seems hardly possible that any single department could during the war carry the whole of the immense problems of the supply departments which have bearing upon the control of labor. Apart from the suggestion that one central authority should be set up, the reports contain proposals for the formation of informal local boards to settle local disputes, or for the appointment of a local commissioner with technical knowledge to settle disputes other than those arising on questions of wages. A proposal which finds general favor is that workshop committees should be set up.

Acute, but not universal, causes of unrest.—Causes of unrest which are reported as acute in certain districts, but are not universal, include:

(1) The want of sufficient housing accommodation in congested areas—especially in Scotland, Wales, the northeast, and certain parts of the northwest and southwest areas.

(2) The liquor restrictions, which operate as a cause of unrest in some districts, but not in others. For example, in the West Midlands area, the need for a further supply of beer of an acceptable quality is urgent, and to some extent the same is true in London and Swansea; on the other hand, in Scotland the subject was never mentioned.

(3) Industrial fatigue, which is not a universal cause of unrest. There is a general consensus of opinion that Sunday and overtime labor should be reduced to a minimum, that holidays should not be curtailed, and that the hours of work should not be such as to exclude opportunities for recreation and amusement.

Psychological conditions.—The great majority of the causes of industrial unrest specified in the reports have their root in certain psychological conditions. Want of confidence is a fundamental cause, of which many of the causes given are merely manifestations. It shows itself in the feeling that there has been inequality of sacrifice, that the Government has broken solemn pledges, that the trade-union officials are no longer to be relied upon, and that there is a woeful uncertainty as to the industrial future. The reports abound in instances of the prevailing feeling that pledges are no longer observed as they were in prewar days. Allusions to "scraps of paper" are painfully numerous. Perhaps sufficient allowance has not been made for the difficulties which have beset all in authority through the ever-changing phases of industrial conditions owing to the war.

Special local causes.—It is noticeable that each of the eight reports has an individual character and lays stress on one or other of the causes of unrest in varying degree. I feel it would be invidious to

refer to individual reports, but I would draw attention to the marked contrast in the character of the reports submitted by the Southwest and the Wales commissions respectively. The reports reflect a great many minor causes of unrest, which are local in character, but these are too numerous to specify in detail.

Relations of employers and employed.—The reports bear a striking testimony to the value of the proposals made in the reports of the subcommittee of the Reconstruction Committee, dealing with the relations of employers and employed.¹ This report was published whilst the commissioners were sitting. Broadly speaking, the principles laid down appear to have met with general approval.

Recommendations of the commissioners.—Food prices.—There should be an immediate reduction in price, the increased price of food being borne to some extent by the Government, and a better system of distribution is required.

(2) Industrial councils, etc.—The principle of the Whitley Report should be adopted; each trade should have a constitution.

(3) Changes with a view to further increase of output should be made the subject of an authoritative statement by the Government.

(4) Labor should take part in the affairs of the community as partners, rather than as servants.

(5) The greatest publicity possible should be given to the abolition of leaving certificates.

(6) The Government should make a statement as to the variation of pledges already given.

(7) The £1 [\$4.87] maximum under the workmen's compensation act should be raised.

(8) Announcements should be made of policy as regards housing.

(9) A system should be inaugurated whereby skilled supervisors and others on day rates should receive a bonus.

(10) Closer contact should be set up between employer and employed.

(11) Pensions committees should have a larger discretion in their treatment of men discharged from the army.

(12) Agricultural wages in the Western area, now as low as 14s. to 17s. [\$3.41 to \$4.14] a week, should be raised to 25s. [\$6.08] a week.

(13) Colored labor should not be employed in the ports.

(14) A higher taxation of wealth is urged by one commissioner.

In addition to the above recommendations, the recruiting system is universally regarded as requiring most careful handling. In some areas an increase in the supplies of alcoholic liquor is demanded. The coordination of Government departments dealing with labor is

¹ This report was reviewed in the September, 1917, number of the MONTHLY REVIEW, pp. 130 to 132.

reported as an urgent matter; and an appeal for increase of publicity and fuller explanations of Government proposals is made in several of the reports. Further, it is recommended that when an agreement has been drawn up between representatives of employers' federations and trade-unions that agreement should be binding on all in the trade concerned. It is also represented that local arbitration tribunals for the settlement of local disputes on the spot could with advantage be set up.

The feeling in the minds of the workers that their conditions of work and destinies are being determined by a distant authority over which they have no influence, requires to be taken into consideration, not only by the Government, but by the unions themselves. Taken as a whole, the reports throw a flood of light upon the conditions of work and of life in the various divisions, and the information which they disclose would amply repay the trouble of perusal of the reports in detail and of a careful comparison one with another.

In conclusion, Mr. Barnes desires "to draw attention to two points—the practical unanimity of the reports, and the remarkable promptitude with which they have been compiled." He observes that "Had it not been for the whole-hearted cooperation of the commissioners and their local secretaries, it would have been quite impossible for a comprehensive inquiry into the intricate subject of industrial unrest to have been completed within the time allotted."

EXTENSION OF THE EMPLOYMENT OF WOMEN IN GREAT BRITAIN.

[Reprinted from the Labor Gazette (London), August, 1917, p. 274.]

The figures in the following tables are based on returns made by employers to the industrial (war inquiries) branch of the Board of Trade; they relate to employed persons only, excluding home workers, and the persons employed are classified according to the nature of the employer's business.

The position as regards the employment of females in April, 1917, is summed up in the following table, which shows (a) the expansion in the employment of women and girls since July, 1914; (b) the extent to which they are directly replacing males, according to the returns made by the employers.

TABLE I.—SUMMARY OF THE POSITION AS REGARDS THE EMPLOYMENT OF WOMEN, APRIL, 1917.

Occupation.	Estimated number of females employed in July, 1914.	Increase (+) or decrease (-) in the employment of females since July, 1914.		Direct replacement of men by women.	
		Number.	Per cent of those employed in July, 1914.	Number.	Per cent of those employed in July, 1914.
Industries 1.....	2,184,000	+ 453,000	+ 20.7	438,000	20.1
Government establishments 2.....	2,000	+ 198,000	+ 9,404.9	187,000	8,926.0
Agriculture in Great Britain (permanent labor).....	80,000	.....	- .2	32,000	40.3
Transport 3.....	19,000	+ 62,000	+ 325.4	64,000	338.7
Finance and banking.....	9,500	+ 50,000	+ 526.2	48,000	505.5
Commerce.....	496,000	+ 307,000	+ 61.9	308,000	62.0
Professions.....	67,500	+ 21,000	+ 31.2	20,000	29.4
Hotels, public houses, cinemas, theaters, etc.....	176,000	+ 13,000	+ 7.4	35,000	19.8
Civil service.....	66,000	+ 89,000	+ 134.9	83,000	126.5
Local government.....	158,000	+ 47,000	+ 23.9	41,000	20.7
Total.....	3,298,000	+ 1,240,000	+ 37.6	1,256,000	38.1

¹ Including controlled firms, but excluding all kinds of Government establishments.

² Including arsenals, dockyards, and national shell, filling, and projectile factories.

³ Estimated figures.

Since the war about 1,240,000 additional females, or 37.6 per cent of the number employed in July, 1914, have been drawn into the various occupations included in the table above. This figure does not, however, represent the net increase in the number of women employed in all occupations, since casual agricultural laborers, domestic servants, and women employed in very small workshops and work-rooms in the dressmaking trade are excluded, as well as women at work in military, naval, and Red Cross hospitals. Under the last head there has been an increase in the numbers of women employed equal to 36,000 full-time workers. On the other hand, the number of female casual laborers in agriculture has fallen by 13,000 since July, 1914, owing to seasonal variations, whilst from small workshops and domestic service it is estimated that there has been a displacement of 300,000 women. Taking these figures together, the net result gives an increase of 963,000 women employed in occupations outside their own homes.

In the occupations enumerated in the table there has been an expansion since January in the number of women employed of no less than 182,000, which is nearly double the increase that took place in the preceding quarter. This acceleration in the growth of women's employment has been felt in all the main groups.

In industrial occupations there has been an increase since January, 1917, of 54,000, compared with 29,000 in the preceding quarter. The metal trades alone accounted for 41,000 of the increase that took place between January and April, and the chemical trades for 8,000.

There has, therefore, been a growth of only 5,000 in all other trades; but though this figure is small it points to a more satisfactory state of affairs than existed either in January or October, when there was an actual decrease in all industries other than the chemical and metal trades. The difference in this respect is largely attributable to the clothing trades, where the numbers of women employed fell by 17,000 between October and January, but only by 3,000 between January and April, presumably owing to seasonal causes. Indeed, it may be said that the greater rate of expansion in industry as a whole in the last, as compared with the previous quarter, is due less to an increase in the rate of growth in the expanding trades than to a check in the rate of decrease of the less prosperous trades. Thus in the textile trades, where there had been a decrease of 5,000 in the numbers employed between October, 1916, and January, 1917, in the last quarter the decrease was only 1,000. The total number of women employed in the textile trades is still 22,000 above the figure for July, 1914, although in the cotton industry alone there has been a decrease of 10,000 since the outbreak of war. The group of industries in which the employment of women declined most between January and April is the food, drink, and tobacco trades, where the number of women employed has fallen by 8,000 since January, compared with a decrease of only 1,000 between October and January. This is largely due to the position in the brewing industry.

Information has also been obtained as to the shortage of women's labor in industrial and commercial occupations. The following table shows for the main industrial groups the increase in the numbers of women employed in January and April combined, with the percentage of firms reporting a shortage of women's labor:

TABLE II.

Industry.	Estimated number of females employed July, 1914.	Increase (+) or decrease (-) since July, 1914, in the number of females employed.		Per cent of firms reporting a shortage of female labor.	
		January, 1917.	April, 1917.	January, 1917.	April, 1917.
Metal trades.....	170,000	+267,000	+308,000	5	4
Chemical trades.....	40,000	+43,000	+51,000	4	5
Textile trades.....	863,000	+23,000	+22,000	42	38
Clothing trades.....	620,000	-34,000	-37,000	23	23
Food trades.....	196,000	+26,000	+18,000	7	5
Paper and printing trades.....	147,500	-6,000	-7,000	22	17
Wood trades.....	44,000	+19,000	+24,000	7	5
All industrial occupations (including some in trades not specified above).....	2,184,000	+399,000	+453,000	11	9

This table shows that there has been a distinct improvement in the supply of female labor for industry in relation to the demand,

the percentage of firms reporting a shortage having fallen by 2 per cent since October, whereas both in January and October there had been a slight increase over the preceding quarter. In the two previous articles on women's employment¹ it was pointed out that the shortage of female labor had increased even in the clothing and textile trades, where the numbers employed had decreased. Now the rate of decrease in these trades has been sharply checked, whilst the shortage in the textile trades has decreased, and that in the clothing trades has remained unaltered. It appears, therefore, that the decrease since January in the numbers employed in these trades, unlike the previous decreases, is due to a real check in the demand for labor, and is not to be explained by a transference of labor, which could have been employed in these trades, to munition factories or other occupations.

In commercial occupations the percentage of firms reporting a shortage of female labor has remained stationary during the last six months.

The actual increase in the number of women engaged in the various occupations is no guide to the number of women who are being employed to replace men. For example, it is common to find a firm, working with a reduced staff, replacing men with some of its existing female staff, without engaging fresh women, while, on the other hand, a firm with a pressure of work on hand may be employing a large number of extra women without using any of them as substitutes for men.

According to the returns received, about 1,256,000 women are directly replacing men, as is shown in detail in Table I. The largest number are to be found in industrial and commercial occupations. Compared, however, with the numbers usually employed, replacements have been most common in the case of Government establishments, the civil service, banking and finance, and transport.

In industrial occupations in every group of trades there has been an increase in the numbers of women reported by employers to be replacing men, the increase for all industries being 62,000 since January, against an increase of 58,000 in the preceding quarter, a difference of only 4,000 in the rate of increase of replacement in the two periods. In the metal and chemical trades, however, replacement seems to have received a considerable impetus, the numbers of replacing women having increased by 38,000 since January, against an increase of 25,000 between October and January. It appears, therefore, that in all other industries the growth of replacement has been less rapid in this than in the preceding quarter, despite the fact

¹ See Labor Gazette (London) for January, 1917 (p. 7), and April, 1917 (p. 125). Reproduced in MONTHLY REVIEW for March, 1917, and June, 1917, respectively.

alluded to above that an actual decrease in the numbers of all women employed in these trades in the earlier period changed to an increase in the latter period.

REPLACEMENT OF MEN BY WOMEN IN FRENCH INDUSTRIES.¹

There is never a "dead season" in bread making, and a constantly increasing number of women and young persons are employed in operating the presses and molding machines. In biscuit baking women are employed in occupations for which heretofore they have been considered inept, such as molding, scaling (dough cutting), and baking. Notwithstanding the higher wages offered by munition manufacturers, no difficulty is met in securing women in the food-preserving industries. In the manufacture of sugar, women are employed as strainers, juice and syrup filterers, diffusers, knife sharpeners, truck movers, washing-machine tenders, etc., and for the first time they are reported as working in starch and glucose factories. Wine making is dependent in a great measure upon old men, women, and young persons.

Women are employed in lead-pencil making; in gas works, as far as possible, and particularly in coke drawing; in light work in storage houses, and in tanneries. In hide and skin curing and dressing, the scarcity of male labor has been met by the introduction of mechanical apparatus and the employment of women in its operation. The work of the women seems to be very satisfactory. They work at pasting by hydraulic pressure, machine leather splitting, vamp leather finishing, drying, sizing, dressing (black dyeing), sole polishing, framing and removing from frames, in drying rooms, shaving, etc. In certain boot and shoe making establishments a large proportion of the workers are women, and in establishments using the inner side of split leather, and in those making wooden shoes the employees are mostly women and young persons, while nearly all the employees in establishments using sheepskins are females.

Many women find remunerative employment in the shops established by the English and Belgians, where they are employed in cleaning and laundering, in cutting and repairing clothing, tents, coats, and boots, and at cleaning arms. The method of manufacturing Grenoble gloves has been changed so as to permit the employment of women. Women are also making saddles and harness for the Army, and are employed in woodworking establishments, as operators of tool machines, band saws, lathes, and planes, and at nail and screw driving, hand finishing, coloring, and pumicing furniture, etc.

¹ Data for this article were taken from the Bulletin du Ministère du Travail et de la Prévoyance Sociale (Paris). April-May, 1917, pp. 8 to 44.

An increasing number of them are employed in metallurgy, where their work has proved satisfactory even in the heavier work which employers hesitated to give them. In certain cities 14 to 30 per cent of all employees engaged in this industry are women. There has also been an increase in child labor. For these children apprentice shops have been opened. After instruction varying from 15 days to 3 weeks their work has been satisfactory. Art and trade schools as well as commercial and industrial schools have also furnished a large contingent of workers. Of the 4,641 employees reported as working in 33 establishments engaged in the manufacture of porcelain products, 2,077 were women.

Difficulty is found in securing laborers in bottle and goblet factories. Foreigners and refugees fail to satisfy the requirements and women are employed in blowing and cutting.

Prisoners of war and foreign and colonial laborers are not obtainable in sufficient numbers to satisfy the demands of transportation and storage enterprises, and recourse has been had to women laborers. Children (*enfants*) have taken the places of men as team drivers, and women operate auto trucks and are also employed as tram conductors.

ESTABLISHMENT OF TRADE SCHOOLS FOR FRENCH MUNITION WORKERS.¹

The French Minister of Munitions under date of March 1, 1917, issued a circular to the directors of military and artillery establishments and heads of industries employing 300 or more workers, directing that trade schools be organized for the purpose of giving workmen a thorough knowledge of the theory and practice of their individual trades, or that the employees be permitted to take advantage of the district industrial schools.

In the circular the minister says that from a special investigation it has been demonstrated that it is possible in two or three months, according to the requirements of the trade, to give workers in certain trades sufficient instruction, both in theory and practice, to render them more adept and to enable them better to understand their trades, and capable of operating machine tools without the aid of an instructor.

It is recommended that necessary apparatus and equipment be provided in workrooms, so as to furnish the most favorable conditions for imparting instruction under the supervision and advice of superintendents or overseers, and that opportunity be furnished to observe processes and the manipulation of apparatus. In large establish-

¹ Data taken from Bulletin du Ministère du Travail et de la Prévoyance Sociale (Paris), April-May, 1917, p. 44.

ments where many workers are in need of instruction it is suggested that the instruction may be given in special workrooms easily accessible to rooms where the principal types of machines are assembled and where supervisors or assistants are readily available.

Practical instruction should be alternated with verbal. An hour in the morning or afternoon during the working period should be devoted to lectures on technique. The course of instruction should include the interpretation of designs, and in a general way shop practice, tracing, and trade terminology; properties of such metals as iron, steel, copper, bronze, and brass, and the resistance, elasticity, tempering, welding, annealing, and polishing of same; lubricants; re-forging and sharpening of tools; and other principal items in handling and operating tools, etc.

Certain national trade schools are mentioned which will immediately place at the disposal of the authorities the means for providing such instruction.

PROVISION FOR DISABLED SOLDIERS.

UNITED STATES GOVERNMENT TO CARE FOR ITS DISABLED SOLDIERS.

Attention has been given in the MONTHLY REVIEW to efforts being made by Canada, France, Germany, and Great Britain for the care of the disabled soldiers of the war.¹ The United States Government through the Office of the Surgeon General of the Army, is now preparing to undertake work along similar lines for the American soldiers who may be wounded or maimed on the battle fields of Europe. This work of rehabilitating injured soldiers and fitting them to become wage earners will be accomplished, according to a statement recently issued by the Surgeon General's Office, through (1) the usual curative treatment, special and general; (2) additional measures for functional restoration; (3) occupational therapy of a vocational nature; (4) an actual induction into a school or plant for the final vocational training. During the entire period the patient is to remain under military control.

It is proposed that the usual therapeutic measures, medical and surgical, special and general, shall be employed, as well as existing facilities permit, from the time the injury is received and continued through the series of hospitals through which the wounded may pass, until they reach the base or general hospital where final treatment is given. For those who are permanently disabled, this base or general hospital will be in the United States, where, upon the arrival of the patient additional curative measures will be instituted, followed by the use of all the known means which are of value in bringing about restoration of function in parts which have been permanently damaged to a greater or less degree. Roughly these measures consist in massage in its various forms, the use of various appliances known as mechanotherapy, the use of electricity, hydrotherapy, etc.

The greatest possible restoration of function having been secured, the plan contemplates a readjustment of the damaged individual to life outside the hospital. The details of this portion of the treatment will vary, to a considerable extent, according to the nature of the

¹ See MONTHLY REVIEW for June, 1917, pp. 867-874; August, 1917, pp. 165-174; the present issue, pp. 48 to 52.

injury, but in general they tend to the same end, that is, to accustom the soldier to the use of artificial or partially damaged members, and to equip him with vocational training and educational teaching in order to render him able to adjust himself to life as he will meet it upon his discharge from the hospital.

The question then arises: Can the soldier follow his prewar occupation? In some cases it will be possible without any reeducation. In others it will be possible after a period of reeducation. In many cases the prewar occupation can not be resumed. For those who are unable to follow their previous occupation a complete reeducation in an entirely new or a related occupation will be necessary.

To accomplish this the Surgeon General suggests that at the base or general hospital abroad there must be, in addition to the usual means of treatment, the beginnings of vocational reeducation in the form of occupational therapy, and that there must be some work suitable for those men to do who are compelled to remain in bed for long periods, or who hobble about the wards. To this end it is planned to provide a number of what may be called "bed occupations"—things which can be done by those having the use of one hand or both, while they are practically helpless otherwise. The materials necessary for this work will be packed in standard boxes for every occupation selected, and one box for each occupation will constitute a standard kit. For each hospital of 1,000 patients, one trained instructor will be provided, preferably a woman, who will develop among the wounded assistant teachers to teach the details of the work to their fellows. At some of the larger hospital centers curative workshops will be established.

After the invalided soldier has returned to the United States an individual study of his condition and capabilities will be made, consisting of a general survey of his past life, a special vocational inquiry to develop what he wants to do in the future, what he probably can do, and how well the two agree, and a careful medical examination. Based upon this study definite recommendations can be furnished as to an ultimate disposition, this to be determined by legislation governing discharged soldiers.

Those whose disability does not prevent them from following a former occupation or from taking up by their own efforts a suitable new one, will be discharged from the Army as soon as they no longer need medical treatment.

The Surgeon General further suggests that those whose disability is of such extent or character as to make it practically certain that they must always remain helpless and unable to follow any occupation to any appreciable degree, should likewise be discharged from the Army and placed either in special homes or hospitals, the Government assuming their care during the remainder of their lives, or

discharged into the care of friends or relatives. In the latter case they would still retain the privilege of returning to the Government hospitals or homes should they so desire.

Finally there are those soldiers who are unable to follow their previous occupations without a complete or partial reeducation or who must learn a new occupation. In this connection the Surgeon General recommends that the patient be kept in the proper hospital until the maximum curative results are obtained, the greatest functional restoration to be expected attained, needed artificial appliances or limbs fitted, and sufficient occupational therapy of a vocational nature given to accustom the patient to rely upon himself, after which these men could be transferred for reeducation at the appropriate institution, depending upon the nature of the injury. The blind, deaf, or dumb could be sent to selected institutions giving instruction to those so injured; those desiring to enter industry could be sent either to technical schools or directly to plants where their reeducation could be arranged for; and those desiring to take up the various occupations included in commercial work, those desiring to enter the civil service, and those desiring to enter agricultural work could be placed accordingly.

The Surgeon General proposes to have the physical reconstruction work become a standard part of the work of general hospitals at home and abroad and to build as few hospitals exclusively for this purpose as is found practicable. This is because it is felt that if the work is carried on as part of the regular medical work of the service, it becomes incumbent upon all to take it seriously, whereas, if isolated in special institutions entirely, there would probably be an inevitable tendency to regard it as something apart from the general medical field, to be practiced by specialists only, and hence not requiring the interest of the service at large. While no doubt there will be some hospitals devoting themselves exclusively to this class of work, an effort is to be made to make it as general as possible so that at the end of the war the matter may not be dropped, but can be continued permanently as work of the Medical Department. The purposes here outlined are now being worked out in the office of the Surgeon General of the Army.

A most important branch of the work contemplated in any plan to rehabilitate injured soldiers is that of military orthopedics, which includes the selection and fitting of artificial appliances and the restoration of damaged functions. It is estimated that from 30 to 40 per cent of the casualties of the present war require special orthopedic methods in their treatment, and that from 70 to 75 per cent of these, when so treated, can be restored to military usefulness. The necessity for special attention to these cases is therefore apparent. The classification adopted of the conditions to be considered orthopedic

is practically the same as that in use by the British Government, and is as follows:

- (a) Derangements and disabilities of joints, including ankylosis.
- (b) Deformities and disabilities of the feet, such as hallux valgus, hallux rigidus, hammer toes, metatarsalgia, painful heels, flat or claw feet.
- (c) Malunited or ununited fractures.
- (d) Injuries to ligaments, muscles, and tendons.
- (e) Cases requiring tendon transplantations or other treatment for irreparable destruction of nerves.
- (f) Nerve injuries, complicated with fractures or stiffness of joints.
- (g) Cases requiring surgical appliances, including artificial limbs.

Since prescribed and regulated work is one of the most valuable therapeutic agencies that is in use in the great orthopedic hospitals abroad, the development of the so-called curative workshop is a natural part of the general orthopedic equipment, and since the re-education and training for industry is a natural development of this, a special advisory committee, to be called the advisory vocational board, has been appointed and is as follows:

Dr. Royal Meeker, labor; Dr. David Edsall, medicovocational; Mr. John E. Wilder, industrial and employment; Mr. Charles E. Stone, industrial and employment; and Dr. Dean Lewis, general surgery.

The division of military orthopedic surgery has in contemplation the establishment abroad, principally in France, of 35,000 beds, and of 14,000 beds in this country. Thirty-six orthopedic and young surgeons and 12 from the Army medical school will soon be sent to France, and plans have been developed for the opening in France of hospitals with an initial equipment of 5,000 beds, also necessary supplies, hydrotherapeutic plants, curative workshops, etc. In this country courses of study have been arranged with universities for intensive orthopedic training for young surgeons intending to enter the orthopedic service.

EUROPEAN EXPERIENCE IN RETURNING DISABLED SOLDIERS TO CIVILIAN LIFE.¹

There is being published in London a journal entitled "Recalled to Life,"² devoted to the care, reeducation, and return to civil life

¹ An account of how France returns her disabled soldiers and sailors to civilian life is given in the August (1917) issue of the MONTHLY REVIEW, pp. 105 to 110. An extended outline of the work being done by the military hospitals commission of Canada appeared in the MONTHLY REVIEW for June, 1917, pp. 867 to 874. A further account of how Canada is meeting the problem of the returned disabled soldier is given in the MONTHLY REVIEW for August, 1917, pp. 111 to 113.

² The editor is Lord Charnwood, who may be addressed at 322 Adastral House, Victoria Embankment, London, E. C. 4. The journal is published at 83-91 Great Titchfield Street, Oxford Street, London, W., 1. The note transmitting the first copy states that the publication will "be issued periodically * * * under the auspices of the War Office, the Pensions Ministry, the Red Cross, and Order of St. John of Jerusalem joint war committee."

of disabled sailors and soldiers, the first issue making its appearance in June, 1917. Its purpose is "to diffuse as widely as possible among those who are in any way concerned with the welfare of our sailors and soldiers returning disabled from the war, and not less among such sailors and soldiers themselves, knowledge as to the means by which they may be restored, as nearly as the nature of their injuries permits, to full participation in, and full enjoyment of, the activities of civil life."

The first article is a memorandum prepared by Sir Alfred Keogh, director, general army medical service for the Anglo-Belgian committee, and presents a preliminary survey of the whole subject of treatment of disabled men in Great Britain. Soon after the outbreak of the war a governmental committee was appointed to consider the subject of the most efficient method of dealing with the problem of the discharged and disabled soldier. This committee, after taking evidence, reported (1) that the care of the sailors and soldiers disabled in the war is a duty which should be assumed by the State; (2) that this duty should include the restoration of the man's health, where practicable, the provision of training facilities, if he desires to learn a new trade, and the finding of employment for him, when he stands in need of such assistance; (3) that for the discharge of these duties a central committee should be appointed and empowered to act, either through the agency of the appropriate public department, or independently, as the case may require; and (4) that the central committee should have the assistance of subcommittees for Ireland and Scotland, and local committees in any part of the United Kingdom where the circumstances justified the establishment of such an organization. In 1915 Parliament passed an act to effectuate these purposes. Special arrangements are being made for special classes of patients, such as cases of tuberculosis, cases of epilepsy, and cases of severe neurasthenia and of paralysis. For the sick or wounded man who has been declared unfit for future military service the procedure that has been put into practice is stated in the article to be as follows:

1. He is brought to a first-grade hospital in the United Kingdom for treatment by specially selected physicians and surgeons.
2. He is transferred to an auxiliary hospital for continuance of treatment during his convalescence.
3. He is returned to a first-grade hospital and is, in due time, brought before a board of Royal Army Medical Corps officers who testify, in the appropriate documents, as to his condition, the origin of his disability, etc., for the information of the Pensions Ministry. He is visited by representatives of the local committee of the area in which the hospital is situated and, by them, appropriate information regarding his condition and circumstances is conveyed to the local committee of the area in which he is going to reside.

4. When about to be discharged from hospital to his home he is given a card containing essential information, which he keeps. A similar card is sent to the local committee of his home area by the hospital authorities.

5. On arrival at his home he is visited, or communicated with, by a representative of his local committee and informed of arrangements which have been made (*a*) for his treatment (if any), (*b*) for his reeducation (if required), (*c*) for his employment (if necessary).

6. Meanwhile he is receiving a pension, the amount of which depends upon the gravity of his disease or injury, and this pension may be supplemented, the amount of such supplementary aid depending upon the various circumstances of the man.

7. If his is an orthopedic case he is treated at an orthopedic hospital; if his is an ordinary medical or surgical case, either by a general practitioner or by attendance at any general, civil, or military hospital.

8. During this period of out-patient treatment he undergoes the process of reeducation, in so far as he is physically fit, and at the termination of the treatment his whole time is available for reeducation.

A description is given of the system of curative manual treatment carried on at the Military Orthopedic Hospital in London. Here, in the curative workshops, the object is to accelerate the men's recovery by providing them with congenial occupations, every man, so far as possible, being employed at his prewar trade. In this hospital, from July, 1916, to March, 1917, over 19,000 separate treatments were given to over 750 different patients, and the estimated value of the work turned out by them in the shops since October, 1916, was £1,649 (\$8,024.86).

An article on orthopedic surgery is contributed by Col. Sir Robert Jones, C. B. He defines orthopedic surgery as the treatment by manipulation, by operation, and by reeducation, of disabilities of the locomotor system, whether arising from disease or injury. This work has developed very great importance in the present war because of deformities produced by severe wounds caused by modern explosives.

There is a comprehensive article on pensions, presenting a historical summary up to the outbreak of the war and a statement of the provisions made for injured soldiers and their dependents since 1914. The author states that in the royal warrant of 1917 all pensions were raised. Thus, for a widow the lowest rate became 13s. 9d. (\$3.35) instead of 10s. (\$2.43) a week, and an addition of 1s. 3d. (\$0.30) a week was granted after the age of 45; the allowance for one child remains at 5s. (\$1.22), but the rate for the second was raised to 4s. 2d. (\$1.01), for the third to 3s. 4d. (\$0.81), and for each additional child to 2s. 6d. (\$0.61). Higher rates were also fixed for the children of disabled soldiers, at the scale for orphans if the father was totally disabled, and on a proportionately lower scale according to any lesser disablement of the father.

But it is stated that the most interesting changes were made as to the principle of minimum pensions to disabled soldiers. In the first place the rate for the highest form of disability was raised from 25s. (\$6.08) to 27s. 6d. (\$6.69) for privates, and for lower forms the earning capacity proviso was abolished and the pensions fixed at rates varying from 22s. (\$5.35) to 5s. 6d. (\$1.34) a week, according to the nature of the disability. Thus, it is explained, whatever a man may be capable of earning, he has a claim to a fixed pension as long as his particular disability remains, while on the other hand various provisions are made to meet cases in which, owing to special circumstances, these minimum pensions are deemed inadequate or where special allowances are necessary to secure further treatment or training. In this connection the article states:

1. Where a disabled man requires constant attendance a further allowance not exceeding 20s. [\$4.87] a week may be made.

2. Where a disabled man can show that his minimum pension plus any allowance for children that he may have, plus the average earnings of which he is still capable, makes a sum less than his average prewar earnings, he may be granted a pension which, together with average earnings of which he may be deemed capable, shall not exceed his prewar earnings up to a maximum of 50s. [\$12.17] per week plus half any prewar earnings between 50s. [\$12.17] and 100s. [\$24.33]. This proviso may best be understood by concrete cases. Take (A), a man with two children, who was earning £4 [\$19.47] a week before the war and is now totally disabled:

For his total disablement his minimum pension is, weekly	£1	7s.	6d.	[\$6.69]
For his two children he gets	0	9s.	2d.	[\$2.23]

Total minimum weekly income	1	16s.	8d.	[\$8.92]
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Presuming he can now earn nothing, he can claim a pension of £2 10s. [\$12.17], plus half his former earnings between £2 10s. [\$12.17] and £4 [\$19.47], i. e., 15s. [\$3.65], making a total of £3 5s. [\$15.82]. Another man (B), partially disabled and without children, may have been earning £5^s [\$24.33] a week previously:

His disablement, let us assume, entitles him to a minimum

pension of, weekly	£1	2s.	0d.	[\$5.35]
While his average earning capacity is estimated at	1	0s.	0d.	[\$4.87]

Total minimum weekly income	2	2s.	0d.	[\$10.22]
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This man can claim a pension of £1 10s. [\$7.30]. This, added to his weekly earnings, gives him £2 10s. [\$12.17] a week. To this sum the State adds half his former weekly earnings, between £2 10s. [\$12.17] and £5 [\$24.33], i. e., £1 5s. [\$6.08]. Thus his total income reaches £3 15s. [\$18.24] a week.

3. To encourage a disabled and discharged man to undergo curative treatment and such special technical training as is necessary to enable him to earn his livelihood special provisions have been inserted in the royal warrant. A man who is certified for further treatment and chooses to undergo such treatment and training receives while undergoing it a pension of 27s. 6d. [\$6.69] a week, i. e., the sum which would have been given to him had he been totally

disabled. If for the purpose of this treatment or training he has to leave home, his wife, children, and dependents draw allowances at the most favorable rate, i. e., they draw as much as if the man had been killed in action.

The efforts being made by France and Germany in the care of disabled soldiers are reviewed in an article prepared by the Local Government Board. In both countries, it is reported that special measures are needed to induce the disabled generally to take advantage of the opportunities of restoration or training available to them, but in neither country does there appear to be any difficulty at present in finding employment for disabled men. The training is left largely to local effort, and the financial assistance given by the central Governments is said to be small. The experience of these countries indicates that special effort must be made to stimulate the willingness to recover efficiency and to overcome the despondency which arises from the shock of disablement, that as soon as possible the patient should be put under the particular treatment most likely to restore the maximum of function to the disabled part of the body, and that also, as soon as possible, he should begin some employment. It has been found a great help to encourage the general educational development of the patient as a part of the ordinary training.

It is noted that in France there is a tendency for institutions to specialize for definite kinds of injury and that Germany has the advantage, for training purposes, of the numerous technical schools, with close cooperation in a number of towns between the hospitals and the technical schools. In both countries, and in Great Britain as well, the fear of reduced pensions militates against willingness of disabled men to strive for industrial recovery, making it necessary for the Governments to assure the men that they shall not lose by making themselves good wage earners. Wherever possible the men are fitted to reenter their old trades, and, in Germany and France, Government positions are made available to some. Appeals have been addressed to employers and there is talk of some compulsion, direct or indirect, to employ disabled men. In France a law has been passed setting up a special fund for payment of compensation for industrial accidents to men employed in industry who have been previously disabled in the war. The importance of securing the return of disabled men to agriculture is emphasized, and in Germany a law has been passed which enables the disabled man to capitalize a part of his pension for the purchase of small holdings. The treatment of soldiers suffering from tuberculosis has received special attention in France, while it is believed that in Germany the existing scheme for dealing with tuberculosis among the general population has been extended with particular reference to the care of soldiers, a large sum of money being expended for carrying on the work.

FARMS FOR RETURNED CANADIAN SOLDIERS.¹

The Minister of Lands, Forests, and Mines of Ontario announces that the Province will soon undertake to establish an agricultural colony in the vicinity of Port Arthur. The plan is already being tried at one point, where 30 sets of farm buildings will be grouped in one community, equipped with a school. About September 1 the buildings will be ready for use. Separate houses are built for single men, and it is hoped that there will be a demand for more buildings as the community develops. The Government clears ten acres of land and advances a \$500 loan on the improvement. Interest on the loan is 6 per cent, no payments are required during the first three years, and the loan expires in 20 years. The farmers are to be allowed 5 years to make certain improvements and develop the farms. The applicants already number 300. Selections are carefully made by giving a preliminary 30 days' trial course, to determine if men are suited to farming, and those who show no special interest in such work are promptly eliminated. During the trial period the men are given soldiers' regular pay, separation allowances and shares from the patriotic fund.

LAND SETTLEMENT FOR SOLDIERS IN AUSTRALIA.

Recent newspaper reports describe the comprehensive plans of the Australian Federal and State governments for the employment and land settlement of returned soldiers and sailors. The following account of these plans is taken from the *Christian Science Monitor* (Boston):²

From the decisions arrived at the Federal Government scheme for dealing with repatriated soldiers and sailors would appear to be very thorough; it may be said to have a threefold object:

First. To make provision for the wives and dependents of fallen Australian soldiers or sailors; to provide for the pensioning of Australian soldiers and sailors who have been totally incapacitated, and for the settlement in suitable occupations of those who, though maimed, are capable of work.

Second. To provide for the repatriation and resettlement, either upon the land or in other ways, of all returned Australian soldiers and sailors who have served in the war.

Third. It is proposed to finance and (in conjunction with the several State governments, who will provide the land) to direct and administer a scheme of land settlement not only for repatriated Aus-

¹ From report of United States consul at Fort William and Port Arthur, Ontario, Aug. 9, 1917, to State Department.

² Aug. 21 and 25, 1917.

tralians, but also for properly discharged and approved soldiers and sailors of the British Army and Navy, who have served in the present war, and who may wish to make their future homes in the Commonwealth.

This extension of the benefits of a post-war settlement scheme to men properly discharged from the naval and military forces of Great Britain was decided upon at a conference of Australian premiers held in January last.

It may be stated that at the above-mentioned conference of premiers, it was unanimously agreed as a broad basis for the project under discussion, that the necessary funds for the administration of the scheme should be raised by the Federal Government, while the land should be provided by the various States. In pursuance of this all the State legislatures are acquiring, by purchase or otherwise, large areas of land suitable for the purpose in view and either have passed or are passing such measures as may be required for its successful operation.

For the purpose of financing the scheme as a whole, the Federal Government has promised £2,000,000 (\$9,733,000) for the current year, and has pledged itself to raise an additional £30,000,000 (\$145,995,000) in the future. Of this total, £20,000,000 (\$97,330,000) is to be raised by loans, and will be devoted to land settlement; that is to say, to that part of the scheme in which British as well as Australian troops will be able to share. As to the other £10,000,000 (\$48,665,000), the Prime Minister has stated that it is to be raised by a tax on incomes spread over a series of years. This sum is to be used exclusively for Australians, and is designed to cover the expense of other forms of repatriation than those involving land settlement.

The Federal treasurer, in his financial statement of March 6 [1917], said that the settlement of returned soldiers on State-owned land would be carried on by the States, which would receive loans from the Commonwealth. Other assistance to returned soldiers was a Federal matter, and was to be provided for by moneys placed in the Australian soldiers' repatriation fund. It is in the first of these provisions alone that British soldiers and sailors would participate.

Resolutions were passed to the effect that with the exception of land settlement and advances to be made against improvements and for other purposes under the laws regulating State institutions, the entire question of the reestablishment of discharged soldiers and sailors and the care of the dependents of soldiers and sailors generally was to be made the concern of a Commonwealth authority.

It was proposed also that the central Commonwealth authority should devise a substantially uniform system of dealing with returned soldiers and sailors and the dependents of soldiers and sailors who

have "died as a result of service," by caring for and training the partially disabled. One of the resolutions adopted set forth in detail the way in which this work should be done.

A further resolution proposed that all funds for purposes relating to the war be placed under the control of the Commonwealth authority; that the office of the Commonwealth authority in each State capital shall act as a registration and clearing center for all soldiers and sailors on their return; and that every returned soldier and sailor be obliged to register there before his discharge, giving particulars as to his needs (if any).

With a view to minimizing the difficulty of reestablishing returned soldiers in civil life, it was resolved to recommend to the Prime Minister that returned soldiers, other than those qualified for a pension, be not discharged until they are certified physically fit to perform some occupation.

The conference regarded the training of intending soldier settlers as an element of the utmost importance to successful settlement. A resolution was passed that the Commonwealth Government should share equally with the States in the cost of such training, and should accordingly subsidize the cost of training farms on the basis of a pound-for-pound contribution.

Under the Government scheme there will be a central commission of seven private citizens, including returned soldiers, acting in an honorary capacity. This commission will prescribe by regulations the nature and extent of the many beneficial activities embraced by repatriation. For instance, it will decide the purposes for which money may be granted and the limits and conditions of such grants.

In each State there will be an honorary board of seven men which will deal with all applications by returned soldiers. Any applicant may appeal to the central commission. The chief executive officer in each State will be responsible for the efficient working of his staff. There will also be throughout Australia district voluntary organizations which will try to find openings for employment in their districts and will generally promote the interests of returned men in every conceivable way.

The reinstatement in civil life of the discharged soldier is to be effected in a variety of ways. All men likely to need assistance are to be registered before their discharge from the army. Through labor bureaus it is hoped that a large number of men will be speedily replaced in their previous occupations.

The Federal Government's scheme aims at settling 40,000 Anzacs on the land, the States finding the land and placing the soldier settlers thereon, while the Commonwealth advances money to enable

the settlers to effect improvements and to buy plants, seeds, stock, etc. The cost of furnishing farms will probably represent £1,000 (\$4,866.50) for each settler, and in addition there will be the sum of £500 (\$2,433.25) for improvements. The States have invited the Commonwealth to agree to raise the maximum advance for improvements to £700 (\$3,406.55). Under the scheme the States will undertake to repay to the Commonwealth the principal and interest of the amounts advanced. Training farms will be established, the cost being borne equally by the States and the Commonwealth.

Men who return with their efficiency impaired will be placed in special workshops. Having given the elementary training which will partly fit the former soldier to take up a new calling, steps will be taken to give him advanced training, probably with a private employer, the latter paying in proportion to the value of the work and the Government making up the difference between that sum and the recognized adult wage in the particular occupation.

PRICES AND COST OF LIVING.

CHANGES IN WHOLESALE PRICES IN THE UNITED STATES.

According to information gathered by the Bureau of Labor Statistics in representative markets of the United States, the wholesale prices of a number of important commodities averaged slightly less in July and August than in the two preceding months. Among articles showing a decrease were smoked hams, sheep, mutton, wheat, wheat flour, rye, rye flour, potatoes, and bituminous coal. Corn, oats, rye, rye flour, potatoes, bituminous coal, coke, electrolytic copper, pig iron, and steel billets were cheaper in August than in July. On the other hand the prices of many commodities, as cattle, fresh beef, hogs, bacon, salt pork, milk, corn meal, cotton, wool, pig tin, and tin plate, averaged higher in the period July and August than in May and June. August prices of cattle, fresh beef, hogs, bacon, lard, salt pork, butter, eggs, milk, wheat, wheat flour, corn meal, sugar, and wool in most instances showed advances over those of July. In the case of hogs, bacon, lard, and salt pork the increase between July and August was pronounced. All of the foregoing articles except sheep, eggs, potatoes, bituminous coal, and copper showed increases in August over the prices prevailing in January and February.

A comparison of wholesale prices of important commodities in representative markets since July, 1914, is contained in the table which follows. The actual money prices for the specified months are shown in the first part. The relative prices in the second part are based on the actual prices, the prices for July, 1914, being taken as 100.

WHOLESALE PRICES, JULY, 1915 AND 1916, AND JANUARY TO AUGUST, 1917, COMPARED WITH JULY, 1914.
Actual Money Prices.

Article.	Unit.	July.			1917							
		1914	1915	1916	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.
FOODSTUFFS.												
(a) Animal.												
Cattle, good to choice steers.	100 lbs..	\$ 9.219	\$ 9.213	\$ 9.985	\$ 10.530	\$ 11.131	\$ 11.869	\$ 12.310	\$ 12.475	\$ 12.550	\$ 12.560	\$ 13.175
Beef, fresh, good native steers.	Lb.....	.135	.132	.141	.138	.141	.149	.160	.160	.162	.164	.171
Beef, salt, extra mess.	Bbl.....	17.250	17.500	18.250	23.250	23.250	24.313	26.250	29.600	30.500	30.500	29.500
Hogs, heavy.	100 lbs..	8.769	7.281	9.825	10.955	12.575	14.794	15.795	16.088	15.706	15.460	17.331
Bacon, short clear sides.	Lb.....	.141	.111	.157	.165	.175	.196	.218	.242	.242	.248	.263
Hams, smoked, loose.	Lb.....	.177	.161	.190	.195	.211	.229	.245	.266	.259	.240	.241
Lard, prime, contract.	Lb.....	.102	.081	.131	.161	.172	.200	.213	.225	.212	.201	.227
Pork, salt, mess.	Bbl.....	23.625	18.500	27.167	32.250	33.250	35.438	39.000	41.450	41.500	42.250	44.438
Sheep, ewes.	100 lbs..	4.538	5.469	6.545	9.260	10.500	11.019	11.715	13.989	9.219	8.600	8.906
Mutton, dressed.	Lb.....	.095	.109	.131	.137	.148	.155	.165	.188	.168	.145	.157
Butter, creamery, extra	Lb.....	.270	.261	.276	.380	.407	.400	.428	.390	.382	.376	.400
Eggs, fresh, firsts.	Doz.....	.187	.169	.223	.411	.415	.275	.319	.338	.313	.318	.339
Milk.	Qt.....	.030	.030	.031	.051	.050	.049	.049	.048	.046	.050	.060

WHOLESALE PRICES, JULY, 1915 AND 1916, AND JANUARY TO AUGUST, 1917, COMPARED WITH JULY, 1914—Continued.

Actual Money Prices—Concluded.

Article.	Unit.	July.			1917							
		1914	1915	1916	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.
FOODSTUFFS—concl'd.												
<i>(b) Vegetable.</i>												
Wheat, No. 1 northern.	Bu.....	\$0.897	\$1.390	\$1.170	\$1.917	\$1.808	\$1.984	\$2.381	\$2.981	\$2.694	\$2.582	\$2.788
Wheat flour, standard patent.	Bbl....	4.594	7.031	6.100	9.215	9.069	9.631	11.619	14.880	13.894	12.750	13.069
Corn, No. 2, mixed.....	Bu.....	.710	.783	.808	.982	1.016	1.123	1.347	1.625	1.716	2.044	1.921
Corn meal, fine yellow..	100 lbs.	1.425	1.725	1.900	2.650	2.750	2.750	3.100	3.700	3.900	4.000	5.175
Oats, standard, in store.	Bu.....	.369	.529	.405	.557	.548	.581	.652	.684	.658	.764	.596
Rye, No. 2.....	Bu.....	.618	1.030	.966	1.448	1.480	1.621	1.854	2.255	2.415	2.226	1.818
Rye flour, pure, medium straight.	Bbl....	2.975	5.388	5.150	7.380	7.250	8.125	9.400	11.900	12.313	11.620	9.738
Barley, fair to good malting.	Bu.....	.533	.743	.746	1.180	1.171	1.215	1.335	1.448	1.334	1.391	1.303
Rice, Honduras, head..	Lb.....	.054	.049	.046	.048	.048	.048	.049	.070	.071	.071	.072
Potatoes, white.....	Bu.....	1.206	.444	.863	1.795	2.469	2.275	2.669	2.705	2.950	2.375	1.460
Sugar, granulated.....	Lb.....	.042	.058	.075	.066	.069	.071	.082	.079	.075	.075	.082
TEXTILES AND LEATHER GOODS.												
Cotton, upland, middling.	Lb.....	.131	.092	.130	.176	.163	.186	.203	.208	.255	.261	.259
Cotton yarn, carded, 10/1.	Lb.....	.215	.160	.253	.340	.320	.310	.360	.365	.375	.450	.440
Sheeting, brown, Pepperell.	Yd.....	.070	.060	.078	.110	.110	.110	.120	.140	.150	.140	.140
Bleached muslin, Lonsdale.	Yd.....	.085	.075	.088	.110	.110	.110	.113	.118	.135	.160	.160
Wool, fine fleece, scoured.	Lb.....	.575	.652	.761	1.000	1.087	1.130	1.152	1.304	1.348	1.478	1.630
Worsted yarn, 2-32's...	Lb.....	.650	.850	1.100	1.250	1.250	1.270	1.300	1.400	1.550	1.600	1.650
Clay worsted suitings, 16-oz.	Yd.....	1.328	1.508	2.000	2.125	2.375	2.375	2.675	2.675	3.250	3.250	3,650
Storm serge, all-wool, 50-in.	Yd.....	.505	.539	.760	.907	.907	.907	.907	.980	1.029	1.176	1.250
Hides, packers', heavy native steers.	Lb.....	.194	.258	.270	.335	.318	.305	.305	.315	.330	.330	.320
Leather, chrome calf....	Sq. ft..	.275	.280	.460	.705	.675	.625	.595	.560	.540	.540	.540
Leather, sole, oak.....	Lb.....	.475	.495	.635	.835	.835	.835	.835	.835	.815	.815	.830
Shoes, men's, Good-year welt, vicl calf, blucher.	Pair....	3.150	3.250	3.750	4.750	4.750	4.750	4.750	4.750	4.750	4.750	4.750
Shoes, women's, Good-year welt, gun metal, button.	Pair....	2.260	2.350	2.750	3.500	3.500	3.500	3.500	3.500	3.500	3.500	3.500
MINERAL AND METAL PRODUCTS.												
Coal, anthracite, chestnut.	2,240 lbs	5.241	5.200	5.507	5.739	5.724	5.726	5.236	5.744	5.836	5.933	6.011
Coal, bituminous, run of mine.	2,000 lbs	2.200	2.200	2.200	4.500	5.000	5.000	5.000	6.000	6.000	5.000	4.400
Coke, furnace, prompt shipment.	2,000 lbs	2.000	1.750	2.750	9.500	9.000	10.000	7.500	7.000	10.000	15.000	10.000
Copper, electrolytic....	Lb.....	.134	.199	.265	.295	.330	.363	.340	.310	.325	.318	.290
Copper wire, bare, No. 8.	Lb.....	.148	.210	.325	.368	.368	.368	.368	.348	.328	.338	.318
Pig iron, Bessemer.....	Ton ¹ ..	14.900	14.950	21.950	35.950	35.950	37.700	42.200	45.150	54.700	57.450	54.750
Steel billets.....	Ton ¹ ..	13.000	21.380	41.000	63.000	65.000	66.250	73.750	86.000	98.750	100.000	86.000
Tin plate, domestic, coke.	100 lbs.	3.350	3.175	5.875	7.000	7.000	7.500	8.000	8.000	8.500	12.000	12.000
Pig tin.....	Lb.....	.311	.391	.389	.430	.490	.515	.543	.585	.630	.620	.639
Pig lead.....	Lb.....	.039	.058	.069	.075	.085	.095	.094	.099	.115	.114	.109
Spelter.....	Lb.....	.051	.220	.113	.098	.099	.109	.108	.095	.096	.093	.088
Petroleum, crude.....	Bbl....	1.750	1.350	2.600	2.850	3.050	3.050	3.109	3.109	3.109	3.109	3.129
Petroleum, refined, water-white.	Gal....	.120	.120	.120	.120	.120	.120	.120	.120	.120	.120	.120
Gasoline, motor.....	Gal....	.140	.120	.240	.220	.230	.240	.240	.240	.240	.240	.240

¹ 2,240 pounds.

WHOLESALE PRICES, JULY, 1915 AND 1916, AND JANUARY TO AUGUST, 1917, COMPARED WITH JULY, 1914—Concluded.

Relative Prices.

Article.	July.			1917							
	1914	1915	1916	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.
FOODSTUFFS.											
<i>(a) Animal.</i>											
Cattle, good to choice steers.....	100.0	99.9	108.3	114.2	120.7	128.7	133.5	135.3	136.1	136.2	142.9
Beef, fresh, good native steers.....	100.0	97.4	104.7	101.9	104.7	110.4	118.5	118.5	119.6	121.5	126.7
Beef, salt, extra mess.....	100.0	101.4	105.8	134.8	134.8	140.9	152.2	171.6	176.8	176.8	171.0
Hogs, heavy.....	100.0	83.0	112.0	124.9	143.4	168.7	180.1	183.5	179.1	176.3	197.6
Bacon, short clear sides.....	100.0	78.8	111.3	117.3	124.3	139.3	154.8	171.8	171.8	175.9	186.5
Hams, smoked, loose.....	100.0	91.0	107.3	110.2	119.2	129.4	138.4	150.3	146.3	135.6	136.2
Lard, prime, contract.....	100.0	79.1	128.3	157.1	168.4	195.4	208.3	220.0	207.2	197.1	222.5
Pork, salt, mess.....	100.0	78.3	115.0	136.5	140.7	150.0	165.1	175.4	175.7	178.8	188.1
Sheep, ewes.....	100.0	120.5	144.2	204.1	231.4	242.8	258.2	307.8	203.2	189.5	196.3
Mutton, dressed.....	100.0	114.7	137.9	144.2	155.8	163.2	173.7	197.9	176.8	152.6	165.3
Butter, creamery, extra.....	100.0	96.7	102.2	140.7	150.7	148.1	158.5	144.4	141.5	139.3	148.1
Eggs, fresh, firsts.....	100.0	90.4	119.3	219.8	221.9	147.1	170.6	180.7	167.4	170.1	181.3
Milk.....	100.0	100.0	103.3	170.0	166.7	163.3	163.3	160.0	153.3	166.7	200.0
<i>(b) Vegetable.</i>											
Wheat, No. 1 northern.....	100.0	155.0	130.5	213.6	201.5	221.2	265.5	332.2	300.2	287.8	310.8
Wheat flour, standard patent.....	100.0	153.1	132.8	200.6	197.4	209.7	252.9	323.9	302.4	277.5	284.5
Corn, No. 2 mixed.....	100.0	110.2	113.7	138.2	143.1	158.2	196.7	238.8	241.7	287.9	270.6
Corn meal, fine yellow.....	100.0	121.1	133.3	186.0	193.0	193.0	217.5	259.6	273.7	280.7	363.2
Oats, standard, in store.....	100.0	143.4	109.8	150.9	148.5	157.5	176.7	185.4	178.3	207.0	161.5
Rye, No. 2.....	100.0	167.6	156.3	234.3	239.5	262.3	300.0	364.9	390.8	360.2	294.2
Rye flour, pure, medium straight.....	100.0	181.1	173.1	248.1	243.7	273.1	316.0	400.0	413.9	390.6	327.3
Barley, fair to good malting.....	100.0	139.4	140.0	221.4	219.7	228.0	250.5	271.7	250.3	261.0	244.5
Rice, Honduras, head.....	100.0	90.7	85.2	88.9	88.9	88.9	90.7	129.6	131.5	131.5	133.3
Potatoes, white.....	100.0	36.8	71.5	148.8	204.7	188.6	221.2	224.2	244.5	196.9	121.1
Sugar, granulated.....	100.0	138.6	178.6	157.6	163.3	168.1	194.0	189.0	179.5	178.6	195.2
TEXTILES AND LEATHER GOODS.											
Cotton, upland, middling.....	100.0	70.1	99.3	134.3	124.2	141.6	154.8	158.1	193.8	199.2	197.7
Cotton yarn, carded, 10/1.....	100.0	74.4	117.4	158.1	148.8	144.2	167.4	169.8	174.4	209.3	204.7
Sheeting, brown, Pepperell.....	100.0	85.7	111.4	157.1	157.1	157.1	171.4	200.0	214.3	200.0	200.0
Bleached muslin, Lonsdale.....	100.0	88.2	103.5	129.4	129.4	129.4	132.9	138.8	158.8	188.2	188.2
Wool, fine fleece, scoured.....	100.0	113.5	132.4	174.1	189.2	196.8	200.6	227.0	234.6	257.0	283.5
Worsted yarn, 2-32's.....	100.0	130.8	169.2	192.3	192.3	195.4	200.0	215.4	238.5	246.2	253.8
Clay worsted suitings, 16 oz.....	100.0	113.6	150.6	160.0	178.8	178.8	201.4	201.4	244.7	244.7	274.8
Storm serge, all-wool, 50-in.....	100.0	106.7	150.5	179.6	179.6	179.6	179.6	194.1	203.8	232.9	247.5
Hides, packers', heavy native steers.....	100.0	133.0	139.2	172.7	163.9	157.2	157.2	162.4	170.1	170.1	164.9
Leather, chrome calf.....	100.0	101.8	167.3	256.4	245.5	227.3	216.4	203.6	196.4	196.4	196.4
Leather, sole, oak.....	100.0	104.2	133.7	175.8	175.8	175.8	175.8	175.8	171.6	171.6	174.7
Shoes, men's, Goodyear welt, vici calf, blucher.....	100.0	103.2	119.0	150.8	150.8	150.8	150.8	150.8	150.8	150.8	150.8
Shoes, women's, Goodyear welt, gun metal, button.....	100.0	104.0	121.7	154.9	154.9	154.9	154.9	154.9	154.9	154.9	154.9
MINERAL PRODUCTS.											
Coal, anthracite, chestnut.....	100.0	99.2	105.1	109.5	109.2	109.3	99.9	109.6	111.4	113.2	114.7
Coal, bituminous, run of mine.....	100.0	100.0	106.0	204.5	227.3	227.3	227.3	272.7	272.7	227.3	200.0
Coke, furnace, prompt shipment.....	100.0	87.5	137.5	475.0	450.0	500.0	375.0	350.0	500.0	750.0	500.0
Copper, electrolytic.....	100.0	148.4	197.8	220.1	246.3	270.5	253.7	231.3	242.5	237.3	216.4
Copper wire, bare, No. 8.....	100.0	141.9	219.6	248.6	248.6	248.6	248.6	235.1	221.6	228.4	214.9
Pig iron, Bessemer.....	100.0	100.3	147.3	241.3	241.3	253.0	283.2	303.0	367.1	385.6	367.4
Steel billets.....	100.0	112.5	215.8	331.6	342.1	348.7	388.2	452.6	519.7	526.3	452.6
Tin plate, domestic, coke.....	100.0	94.8	175.4	209.0	209.0	223.9	238.8	238.8	253.7	358.2	358.2
Pig tin.....	100.0	125.7	125.0	138.3	157.6	165.6	174.4	188.1	202.6	199.4	205.5
Pig lead.....	100.0	147.4	175.6	192.3	217.9	243.6	239.7	253.3	294.9	292.3	279.5
Spelter.....	100.0	435.6	222.8	193.1	195.6	215.4	212.9	188.1	190.7	182.4	172.5
Petroleum, crude.....	100.0	77.1	148.6	162.9	174.3	174.3	174.3	177.1	177.1	177.1	177.1
Petroleum, refined, water-white.....	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Gasoline, motor.....	100.0	85.7	171.4	157.1	164.3	171.4	171.4	171.4	171.4	171.4	171.4

RETAIL PRICES OF FOOD IN THE UNITED STATES.

From July 15 to August 15, 1917, there was a 2 per cent increase in the combined price of the principal articles of food. Of the meats, only pork chops made any noticeable change, and this an increase of 9 per cent. Other advances were 11 per cent for corn meal, 10 per cent for eggs, 9 per cent for sugar, and slighter increases for seven other articles, exclusive of meats. Eight articles declined in price, five, one point each, while potatoes and onions declined 16 and 10 per cent, respectively.

The following table shows for the United States the average and relative prices of the principal articles of food on July 15 and August 15, 1917:

AVERAGE MONEY RETAIL PRICES AND RELATIVE RETAIL PRICES OF FOOD ON JULY 15 AND AUG. 15, 1917.

[The relative price shows the per cent that the average price on the 15th of each month was of the average price for the year 1916.]

Article.	Unit.	Average money price.		Relative price.	
		July 15, 1917.	August 15, 1917.	July 15, 1917.	August 15, 1917.
Sirloin steak.....	Pound.....	\$0.327	\$0.329	120	121
Round steak.....	do.....	.306	.308	125	126
Rib roast.....	do.....	.257	.255	121	120
Chuck roast.....	do.....	.219	.217	127	126
Plate beef.....	do.....	.165	.172	129	134
Pork chops.....	do.....	.316	.344	139	152
Bacon.....	do.....	.429	.430	149	150
Ham.....	do.....	.396	.395	135	134
Lard.....	do.....	.274	.277	157	158
Hens.....	do.....	.280	.279	119	118
Salmon, canned.....	do.....	.266	.271	132	134
Eggs.....	Dozen.....	.420	.460	112	123
Butter.....	Pound.....	.459	.476	117	121
Cheese.....	do.....	.330	.328	128	127
Milk.....	Quart.....	.111	.114	122	125
Bread.....	16-oz. loaf ¹.....	.088	.091	135	140
Flour.....	½-bbl. bag.....	1.766	1.840	164	170
Corn meal.....	Pound.....	.059	.066	174	194
Rice.....	do.....	.106	.106	116	116
Potatoes.....	Peck.....	.645	.534	159	133
Onions.....	Pound.....	.051	.046	104	94
Beans, navy.....	do.....	.195	.192	177	175
Prunes.....	do.....	.160	.162	119	121
Raisins, seeded.....	do.....	.148	.148	115	115
Sugar.....	do.....	.091	.099	114	124
Coffee.....	do.....	.306	.305	102	102
Tea.....	do.....	.599	.602	110	110
All articles combined.....				123	131

¹ 16 ounces, weight of dough.

From August 15, 1916, to August 15, 1917, the price of the principal articles of food, collectively, advanced 31 per cent. Onions was the only article to decrease in price. Corn meal advanced 98 per cent, or about doubled in price, flour advanced 70 per cent, beans 59 per cent, and other articles to a lesser degree.

The price of food as a whole was 6 per cent higher on August 15, 1914, just after the outbreak of the European war, than it was in August of the previous year, but it was just 6 per cent lower than in August of the following year. After this drop in 1915, however, food advanced 14 per cent by August, 1916, and jumped 31 per cent more in the next year.

Comparing prices the year before the war with prices in August, 1917, food as a whole advanced 47 per cent. Flour advanced 130 per cent, or more than two and one-fourth times the price in August, 1913, corn meal advanced 120 per cent, or nearly as much as flour, potatoes 87 per cent, sugar 77 per cent, lard 72 per cent, and pork chops 58 per cent.

The following table shows the average and relative retail prices of the principal articles of food in the United States on August 15 of each year from 1913 to 1917:

AVERAGE MONEY RETAIL PRICES AND RELATIVE RETAIL PRICES OF FOOD ON AUG. 15 OF EACH YEAR, 1913 TO 1917, INCLUSIVE.

[The relative price shows the per cent that the average price on the 15th of each month was of the average price for the year 1916.]

Article.	Unit.	Average money price Aug. 15—					Relative price Aug. 15—				
		1913	1914	1915	1916	1917	1913	1914	1915	1916	1917
Sirloin steak.....	Pound.....	\$0.265	\$0.278	\$0.265	\$0.284	\$0.329	97	102	97	104	121
Round steak.....	do.....	.233	.252	.238	.257	.308	95	103	97	105	126
Rib roast.....	do.....	.201	.214	.204	.218	.255	95	101	96	103	120
Chuck roast.....	do.....	.181	.167	.177	.217	.....	105	97	103	126	
Plate beef.....	do.....	.131	.123	.129	.172	.....	102	96	101	134	
Pork chops.....	do.....	.218	.250	.216	.243	.344	96	110	95	107	152
Bacon.....	do.....	.281	.287	.270	.293	.430	98	100	94	102	150
Ham.....	do.....	.285	.291	.262	.326	.395	97	99	89	111	134
Lard.....	do.....	.161	.156	.140	.210	.277	92	89	80	120	158
Hens.....	do.....	.215	.222	.205	.238	.279	91	94	87	101	118
Salmon, canned.....	do.....	.....	.....	.198	.202	.271	.....	.....	98	100	134
Eggs.....	Dozen.....	.330	.334	.304	.364	.460	88	89	81	97	123
Butter.....	Pound.....	.355	.362	.335	.366	.476	90	92	85	93	121
Cheese.....	do.....	.....	.....	.227	.245	.328	.....	.....	88	95	127
Milk.....	Quart.....	.088	.089	.088	.090	.114	97	98	97	99	125
Bread.....	16-oz. loaf ¹.....	.....	.056	.063	.064	.091	.....	86	97	98	140
Flour.....	½-bbl. bag.....	.798	.852	.992	1.078	1.840	74	79	92	100	170
Corn meal.....	Pound.....	.030	.032	.033	.033	.066	88	93	96	98	194
Rice.....	do.....	.....	.091	.091	.106	.....	.....	.....	100	100	116
Potatoes.....	Peck.....	.288	.292	.215	.369	.534	71	72	53	91	133
Onions.....	Pound.....	.....	.....	.031	.050	.046	.....	.....	63	102	94
Beans, navy.....	do.....	.....	.....	.076	.121	.192	.....	.....	69	110	175
Prunes.....	do.....	.....	.....	.135	.134	.162	.....	.....	101	100	121
Raisins.....	do.....	.....	.....	.125	.128	.148	.....	.....	97	99	115
Sugar.....	do.....	.056	.078	.067	.085	.099	70	98	84	106	124
Coffee.....	do.....	.....	.....	.299	.299	.305	.....	.....	100	100	102
Tea.....	do.....	.....	.....	.546	.546	.602	.....	.....	100	100	110
All articles combined.....	.....	.....	.....	.....	.....	.....	89	94	88	100	131

¹ 16 ounces, weight of dough.

Computations of average and relative prices for Portland, San Francisco, and Seattle for July of each year from 1914 to 1917, inclusive, were made at the request of the Shipping Board and are given herewith.

It must be borne in mind that these prices are based on varying numbers of quotations in different years, and for this reason the fluctuations shown may be slightly higher or lower than would otherwise be the case. For instance, it would be impossible to obtain prices on the same grade of article in every store scheduled, and the Bureau makes no attempt to do so. Rather, the Bureau obtains prices on any standard grade sold largely in the individual store. Therefore, when from time to time some firms discontinue their reports and new firms are added, if a dropped firm should be quoting on a higher grade or priced article and the new firm on a cheaper grade the average price might be shown as lower, when in reality the actual prices furnished might show no change whatever or even an increase. In the average prices shown for July and August for the 10 cities in the preceding table the Bureau is receiving reports from enough firms so that one or two missing quotations from time to time should not materially affect the average price.

AVERAGE AND RELATIVE RETAIL PRICES OF THE PRINCIPAL ARTICLES OF FOOD ON JULY 15 OF EACH YEAR FROM 1914 TO 1917, INCLUSIVE, IN PORTLAND, OREG., SAN FRANCISCO, CAL., AND SEATTLE, WASH.

Portland, Oreg.

[July, 1914=100.]

Article.	Unit.	Average price July 15.				Relative price July 15.			
		1914	1915	1916	1917	1914	1915	1916	1917
Sirloin steak.....	Pound.....	\$0.233	\$0.205	\$0.223	\$0.256	100	88	96	110
Round steak.....	do.....	.210	.200	.210	.218	100	95	100	118
Rib roast.....	do.....	.191	.185	.199	.240	100	97	104	126
Chuck roast.....	do.....	.162	.152	.158	.197	100	94	98	122
Plate beef.....	do.....	.128	.119	.123	.154	100	93	96	120
Pork chops.....	do.....	.225	.205	.212	.309	100	91	94	137
Bacon, sliced.....	do.....	.304	.297	.286	.421	100	98	94	138
Ham, sliced.....	do.....	.300	.300	.308	.400	100	100	103	133
Lard.....	do.....	.163	.164	.167	.294	100	101	102	180
Hens.....	do.....	.208	.192	.203	.237	100	92	98	114
Salmon, canned.....	do.....	.200	.229	.285	.....	.....	.....	.....	.....
Eggs.....	Dozen.....	.330	.310	.305	.406	100	94	92	123
Butter.....	Pound.....	.329	.350	.343	.460	100	106	104	140
Cheese.....	do.....	.218	.229	.303	.....	.....	.....	.....	.....
Milk.....	Quart.....	.096	.094	.095	.107	100	98	99	111
Flour.....	3-bbl.bag.....	1.458	1.738	1.479	3.075	100	119	101	211
Corn meal.....	Pound.....	.036	.035	.036	.060	100	97	100	167
Rice.....	do.....	.079	.088	.113	.....	.....	.....	.....	.....
Potatoes.....	100 lbs.....	1.725	1.250	2.105	4.278	100	72	122	248
Onions.....	Pound.....	.023	.040	.033	.....	.....	.....	.....	.....
Beans, navy.....	do.....	.083	.103	.188	.....	.....	.....	.....	.....
Prunes.....	do.....	.119	.114	.140	.....	.....	.....	.....	.....
Raisins.....	do.....	.125	.133	.145	.....	.....	.....	.....	.....
Sugar.....	do.....	.056	.077	.089	.094	100	138	159	168
Coffee.....	do.....	.313	.343	.320	.....	.....	.....	.....	.....
Tea.....	do.....	.500	.500	.500
Bread.....	16-oz. loaf.....	.048	.056	.053	.085	100	117	110	177

116 ounces, weight of dough.

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AVERAGE AND RELATIVE RETAIL PRICES OF THE PRINCIPAL ARTICLES OF FOOD ON JULY 15 OF EACH YEAR FROM 1914 TO 1917, INCLUSIVE, IN PORTLAND, OREG., SAN FRANCISCO, CAL., AND SEATTLE, WASH.—Concluded.

San Francisco, Cal.

[1914=100.]

Article.	Unit.	Average price July 15.				Relative price July 15.			
		1914	1915	1916	1917	1914	1915	1916	1917
Sirloin steak.....	Pound.....	\$0.207	\$0.209	\$0.203	\$0.228	100	101	98	110
Round steak.....	do.....	.197	.196	.192	.221	100	99	97	112
Rib roast.....	do.....	.217	.214	.205	.223	100	99	94	103
Chuck roast.....	do.....	.156	.149	.138	.153	100	96	88	98
Plate beef.....	do.....	.147	.134	.129	.149	100	91	88	101
Pork chops.....	do.....	.247	.238	.241	.316	100	96	98	128
Bacon, sliced.....	do.....	.329	.327	.342	.436	100	99	104	133
Ham, sliced.....	do.....	.275	.264	.350	.418	100	96	127	152
Lard.....	do.....	.172	.176	.182	.285	100	102	106	166
Hens.....	do.....	.248	.240	.260	.260	100	97	105	105
Salmon, canned.....	do.....	.171	.188	.240	.....	.....	.....	.....	.....
Eggs.....	Dozen.....	.338	.310	.333	.392	100	92	99	116
Butter.....	Pound.....	.329	.338	.333	.455	100	103	101	138
Cheese.....	do.....	.200	.229	.297	.....	.....	.....	.....	.....
Milk.....	Quart.....	.100	.100	.100	.100	100	100	100	100
Flour.....	4-bbl. bag.....	1.692	1.892	1.833	3.313	100	112	108	196
Corn meal.....	Pound.....	.035	.036	.036	.065	100	103	103	186
Rice.....	do.....	.092	.085	.100	.....	.....	.....	.....	.....
Potatoes.....	100 lbs.....	1.900	1.542	2.483	2.925	100	81	131	154
Onions.....	Pound.....	.022	.033	.020	.....	.....	.....	.....	.....
Beans, navy.....	do.....	.068	.138	.184	.....	.....	.....	.....	.....
Prunes.....	do.....	.125	.128	.148	.....	.....	.....	.....	.....
Raisins.....	do.....	.101	.108	.140	.....	.....	.....	.....	.....
Sugar.....	do.....	.052	.070	.086	.083	100	135	165	160
Coffee.....	do.....	.317	.317	.300	.....	.....	.....	.....	.....
Tea.....	do.....	.517	.517	.521	.....	.....	.....	.....	.....
Bread.....	16-oz. loaf ¹.....	.052	.055	.053	.083	100	106	102	160

Seattle, Wash.

[1914=100.]

Sirloin steak.....	Pound.....	\$0.235	\$0.232	\$0.224	\$0.265	100	99	95	113
Round steak.....	do.....	.213	.205	.206	.252	100	96	97	118
Rib roast.....	do.....	.193	.182	.194	.230	100	94	101	119
Chuck roast.....	do.....	.144	.140	.140	.187	100	97	97	130
Plate beef.....	do.....	.119	.120	.112	.157	100	101	94	132
Pork chops.....	do.....	.250	.223	.216	.328	100	89	86	131
Bacon, sliced.....	do.....	.340	.321	.320	.461	100	94	94	136
Ham, sliced.....	do.....	.310	.293	.300	.405	100	95	97	131
Lard.....	do.....	.158	.158	.163	.280	100	100	103	177
Hens.....	do.....	.238	.212	.225	.258	100	89	95	108
Salmon, canned.....	do.....	.182	.188	.188	.252	.....	.....	.....	.....
Eggs.....	Dozen.....	.311	.298	.332	.430	100	96	107	138
Butter.....	Pound.....	.325	.328	.343	.448	100	101	106	138
Cheese.....	do.....	.218	.225	.303	.....	.....	.....	.....	.....
Milk.....	Quart.....	.086	.084	.086	.120	100	98	100	140
Flour.....	4-bbl. bag.....	1.379	1.731	1.525	3.235	100	126	111	235
Corn meal.....	Pound.....	.032	.035	.034	.065	100	109	106	203
Rice.....	do.....	.086	.084	.104	.....	.....	.....	.....	.....
Potatoes.....	100 lbs.....	2.242	1.963	2.400	3.982	100	88	107	178
Onions.....	Pound.....	.031	.044	.032	.....	.....	.....	.....	.....
Beans, navy.....	do.....	.079	.129	.199	.....	.....	.....	.....	.....
Prunes.....	do.....	.126	.122	.140	.....	.....	.....	.....	.....
Raisins.....	do.....	.122	.128	.140	.....	.....	.....	.....	.....
Sugar.....	do.....	.056	.072	.091	.093	100	129	163	166
Coffee.....	do.....	.326	.326	.308	.....	.....	.....	.....	.....
Tea.....	do.....	.488	.500	.500	.512	.....	.....	.....	.....
Bread.....	16-oz. loaf ¹.....	.059	.062	.067	.091	100	105	114	154

¹ 16 ounces, weight of dough.

HIGH COST OF LIVING CONFERENCE IN GOTTENBORG, SWEDEN,
JUNE, 1917.¹

Upon the invitation of an interested group of persons in Sweden a Scandinavian conference to discuss matters relating to the high cost of living was held in Gottenborg on June 11 and 12 of this year. This was the second conference of its kind, the first one having been held in Malmo, Sweden, in 1915. The first conference was of a private nature, although representatives from the provinces and municipalities took part in it, but the second conference was official in its character. It was presided over by the chairman of what may be termed the Swedish Industrial Commission (*Socialstyrelsen*).

Representatives from the three Scandinavian countries discussed the different phases of the problems before the conference, namely, public and private measures to meet the high cost of living and for relief work during the pending crisis for the prevention of unemployment and distress (unemployment insurance and labor exchanges). Unfortunately no summary of the views presented at the conference are available as yet. Following the meeting a small group of delegates discussed the possibilities of continued cooperative action by the Scandinavian countries to deal with the problems in question. A committee was appointed to maintain cooperative interest and to prepare for future meetings.

¹ Sociale Meddelelser utgit av Departementet for Sociale Saker. Christiania, 1917. No. 3-4, pp. 157, 158.

WAGES AND HOURS OF LABOR.

PRODUCTIVITY AND COST OF LABOR IN THE LUMBER INDUSTRY.

BY BENJAMIN M. SQUIRES.

The results of a study of productivity of labor and labor cost in the lumber industry will shortly be published in a section of Bulletin 225¹ of the Bureau of Labor Statistics of the United States Department of Labor. A similar study of labor productivity and cost has been made of the boot and shoe industry and it is planned to make like studies of other industries in which the output has become more or less standardized.

Beyond a general description of selected occupations, previous reports on lumber manufacture issued by the Bureau have been concerned chiefly with rates of wages and hours of labor.² In the study above referred to an attempt has been made to show what return the workmen give for the wages received.

Wages and hours are, of course, the most conspicuous elements in the labor records of any establishment and have been most often used as an index of the well-being of labor. Compiled over a period of years they show the trend in given industries and not only serve as a guide in the making of wage contracts, but tend in no small measure to preserve established wage differentials as between industries and industrial centers.

Considered independently of other factors, however, wages and hours reflect only superficially the well-being of the employee. Of even greater importance to him is the question of what he must do during the hours of labor and what he can buy with the wages received. It is evident that if prices of consumption goods rise and money wages do not keep pace with the increase in prices, the employee will not be able to buy as much as he has been in the habit of buying. Or, if the expenditure of energy is so great that his working years are cut short, his total earnings as a worker will be reduced even though he receives a higher wage rate. In other words,

¹ Wages and Hours of Labor in the Lumber, Millwork and Furniture Industries. In press.

² A study of production by hand and machine methods was begun in 1894 by the United States Bureau of Labor under authorization of Congress and was published in 1898 as a part of the 13th annual report of the Commissioner of Labor. In a section of this report, devoted to the manufacture of lumber and shingles, labor cost was shown for each process of manufacture. Emphasis was placed, however, rather upon the relative total productivity by hand and machine methods than upon a comparison between identical processes in different establishments or the determination of standards of productivity and cost.

an increase in money wages does not necessarily mean an increase either in real wages (that is, the necessities and comforts purchasable with money wages) or in total earnings during the period of productivity.

It is at this point that wages and hours studies usually fall short. They show what the employee receives per hour and the number of hours of service required but they take no account of the amount of work done or what the money wages will purchase of the necessities of life. As a consequence it is impossible to determine from such studies whether an employee is able to maintain or to improve upon his standards of living, or whether more or less is required of him in return for increased wages and shorter hours.

Two additional elements are thus necessary in determining, as between successive periods of time, whether the employee in a given industry is relatively worse or better off—the purchasing power of his money wages and the energy expended in return for those wages.

The purchasing power of money wages is, of course, dependent on the retail prices of commodities. Expressed in terms of the purchasing power of a dollar¹ it enables one to convert money wages into real wages. Considered with the amount and character of the work performed it shows the true significance of increases in the money wage.

Unfortunately there is no way of measuring accurately the human energy expended in a given occupation, much less the effect upon the worker of such expenditure. The nearest approach to a measure is found in the quantity of work done, expressed in terms of the product. Even this will be of little significance in industries undergoing frequent changes in methods of production. For any industry, however, in which the methods of production have become somewhat standardized, it is possible to determine a rough standard of productivity or output for each process, and occupations connected therewith, and thus to show with sufficient accuracy what is expected of the workers in these different occupations.

In arriving at standards of productivity two records are essential, a record of time and a record of output or of work performed. The time record is conveniently expressed in one-man hours; the output record, in terms of the unit of the industry, as 1,000 board feet of lumber, a pair of shoes, a ton of pig iron. The number of one-man hours necessary to produce a given quantity of output is the time cost; the quantity of output produced in a given time is the productivity of labor. For purposes of comparison it is better to express both time and output in standard unit terms; thus, for the lumber industry the time cost of 1,000 board feet of lumber is the

¹ Bulletin of United States Bureau of Labor Statistics, 197, p. 371. See also Bulletin 228 (in press).

number of one-man hours necessary to produce it; the productivity of labor is the number of board feet produced each one-man hour. There is no such thing as a standard working day, hence the necessity of expressing working time in hours.

It will be observed that the time cost and productivity of labor are quite distinct from the labor cost, which is the total wages paid in the production of a given output. Labor cost may appear as an aggregate of wages over a productive period, as a day, a month, or a year, or it may be expressed in terms of a unit of product, as the total wages paid in the production of 1,000 feet of lumber.

A comparison of total hours worked and wages paid, with total output enables the employer to express his cost in terms of the unit of the industry and to compare total labor with other costs for his own and other establishments in the same industry. This is not of value, however, in determining the relative efficiency of employees or of machines connected with the various processes entering into the finished product. In other words, total labor cost and total productivity show merely the average efficiency of employees or of machines.

If the employer wishes to determine whether the cost of any process is too great or is capable of reduction, the records of time, of wages, and of output must be kept in such a manner that the cost of each process will be shown separately. That is to say, the employer must know what labor costs and what labor produces in each process. This necessitates: First, a classification of processes; second, a distribution of time and of wages in accordance with such a classification; and third, a record of the work done in each process. Furthermore, if costs are to be compared as between establishments, the classification of processes must be uniform for those establishments. Such a record, consistently kept even by a small percentage of the establishments in an industry, will go a long way toward building up standards of cost and of productivity for that industry.

Thus far no attempt has been made to link the interests of the employer with those of the employee. It is important to both, however, to determine standards of labor productivity and labor cost in each process of manufacture. To the employee it is important because it restores his individuality as a producer and shows him what he does or what is expected of him in return for the wages paid for his job. Moreover, it presents the facts necessary for him if he is to get a complete picture of the processes of production in the industry and the relation of his job to other jobs and to the final product. It is important to the employer because it enables him to measure the relative efficiency of the component parts of his establishment, to apportion his costs properly, and to meet competition intelligently.

The need for a determination of standards of productivity and of cost has become more keenly felt because of the recent rapid rise in the prices of all commodities and of the demands generally made by labor for higher wages and better working conditions. It is further emphasized at this time by the possible speeding up of production during the war emergency and by the tendency of employers in different industries and in the same industry to bid against each other for labor and pass the increased cost on to the consumer. Moreover, in the placing of contracts and in embarking on a policy of price regulation in those industries vital to the prosecution of the war and to the well-being of the Nation, the Government has definitely committed itself to the policy of "cost plus reasonable profits," labor cost being predicated upon the maintenance of standards of living and standards of employment already existing.

In the study of the productivity of labor and labor cost in the lumber industry an analysis has been made of wages, hours, and output in the different processes of manufacture for a selected period of operation in 26 sawmills representative of the different forest areas of the United States. In 10 of these establishments it was possible to secure information for logging operations and thus to show labor cost and productivity for processes in manufacture from tree to lumber pile.

The work was complicated by a lack of uniformity as between establishments in the classification of processes, by an inadequate distribution of time and of wages, by variations in methods of manufacture, and by incomplete records of output. It should be stated, too, that the unit of output—1,000 board feet—represents a variable quantity of labor on account of differences in prevailing sizes of trees, in the dimensions of lumber sawed, in kinds of timber, and in the methods of production and handling the finished product.

In order, therefore, that a comparison might be made as between establishments, it was necessary (1) to adopt rather arbitrarily a classification of processes and to determine what occupations or machines should be included in each process;¹ (2) to select those establishments in which a distribution of time and of wages was made and a record of output kept; and (3) to indicate for each establishment the equipment in machines and the character of the output.

For each establishment there is shown, by occupation, process, and machine, the full-time positions, total one-man hours, total wages, total output in board feet, output in board feet per one-man hour, wages cost per one-man hour, and the cost per 1,000 board feet produced in one-man hours and in wages. An identity of processes is preserved for purposes of comparison between establishments, and as

¹ Occupations and processes in the manufacture of lumber, and their classification for the purpose of this study, are described in Bul. 225, previously referred to.

much detail of occupations connected with each process is presented as was possible from the records kept by each establishment.

It is realized that to attempt to express the amount of work done by a man who is felling trees in the forests, or is sawing these trees into log lengths after they are felled, in terms of board feet in the lumber pile does not give a very clear idea of the amount of work performed by the man in the logging camp. An attempt has therefore been made to secure data as to the average yield, in board feet, per tree. While this information could not be ascertained for all establishments, it was secured for a sufficient number to make the matter fairly clear. Estimates were also furnished by the United States Bureau of Forestry, the method by which such estimates were obtained being explained as follows: "The average diameter and merchantable length were determined by the inspection of volume tables which give the number of trees of each diameter measured in various regions where actual logging operations were being conducted. Since these trees were measured under these circumstances, they tend to appear in the table in about the proportion in which they were used by the loggers. The average diameter and merchantable length having been found, the corresponding contents in board feet where found from the same tables."

In the table which follows these estimates are shown for the principal kinds of timber in the United States:

ESTIMATED AVERAGE TREE SIZES AND MERCHANTABLE LUMBER PER TREE IN THE DIFFERENT FOREST SECTIONS OF THE UNITED STATES.

Estimates of logging companies on timber holdings.			Kind of timber.	Estimate of United States Bureau of Forestry.		
Establishment number.	Average yield per tree in board feet, lumber measure.	Average length in feet of portion of tree used for lumber.		Average yield per tree in board feet, lumber measure.	Average length in feet of portion of tree used for lumber.	Average diameter of tree in inches. ¹
5	175	38	White spruce, red spruce.....	150	40	14
23	300	48	Eastern white pine.....	350	64	18
			Norway pine.....	350	64	18
13	474.4	60	Western yellow pine:			
			Rocky Mountains.....	500	66	22
14	750	80-90	California.....	3,000	110	36
23	550	48	Western white pine, long-leaf yellow pine.....	400	50	20
			Short-leaf yellow pine.....	370	64	18
3	660	50-70	Eastern hemlock.....	500	50	24
18	1,200-2,000	(²)	Western hemlock.....	650	88	22
13	496	64	Larch.....			
36	235	24	White oak.....	560	48	24
36	350	50	Poplar, yellow.....	1,000	64	30
37	600	65	Cypress.....	750	72	28
13	222	42	Western fir, Douglas fir:			
			Rocky Mountains.....	500	64	22
18	2,500	(²)	California.....	3,000	120	36
			Oregon.....			
38	6,962	140	Washington.....			
21	7,000-8,000	80-85	Redwood.....	4,000	144	40
18	2,500	(²)	Western red cedar.....	300	80	30
18	500	(²)	Incense cedar.....	650	64	30

¹ Diameter outside bark 4.5 feet above ground.

² Not specified.

As an example of the scope of the study, the following basic facts drawn from the logging records of establishment No. 21 are here presented:

ESTABLISHMENT NO. 21.

[Number of logs hauled, 6,257 (no other output record); log scale, 7,886,129 board feet; kinds of timber: redwood, 70 per cent; white pine, 28 per cent; fir, 2 per cent.]

Occupation.	Full-time positions.	Total one-man hours.	Total wages.	Total output in board feet.	Output in board feet per one-man hour.	Wage cost per one-man hour.	Cost per 1,000 board feet produced.	
							One-man hours.	Wages.
Foremen, scalers, general:								
Foremen.....	2	540	\$317.20	5,938,255	10,997	\$0.5874	0.0909	\$0.0534
Scalers.....	5	1,170	332.80	5,938,255	5,075	.2844	.1970	.0560
Total.....	7	1,710	650.00	5,938,255	3,472	.3801	.2880	.1095
Felling and log making:								
Choppers and fellers.....	55	13,775	4,029.90	5,938,255	431	.2926	2.3197	.6786
Peelers.....	33	8,295	1,946.20	5,938,255	716	.2346	1.3969	.3277
Sawyers (bucks).....	20	5,060	1,866.15	5,938,255	1,174	.2700	.8521	.2301
Filers.....	2	550	220.00	5,938,255	10,797	.4000	.0926	.0370
Total.....	110	27,680	7,562.25	5,938,255	215	.2732	4.6613	1.2734
Skidding, yarding, and loading:								
Engineers.....	7	1,947½	730.30	5,938,255	3,049	.3750	.3280	.1230
Firemen.....	6	1,370	342.45	5,938,255	4,334	.2500	.2307	.0577
Wood bucks.....	10	2,472½	559.15	5,938,255	2,402	.2261	.4164	.0942
Chunk sawyers.....	3	675	168.70	5,938,255	8,797	.2499	.1137	.0284
Pump men.....	3	812½	183.25	5,938,255	7,309	.2255	.1368	.0309
Powder man.....	2	552½	165.75	5,938,255	10,748	.3000	.0930	.0279
Mucker.....	1	165	33.00	5,938,255	35,989	.2000	.0278	.0056
Splicers.....	2	515	154.50	5,938,255	11,531	.3000	.0867	.0260
Spool tenders.....	4	1,102½	361.45	5,938,255	5,386	.3278	.1857	.0609
Signalmen.....	4	1,185	238.75	5,938,255	5,011	.2015	.1996	.0402
Chasers.....	2	412½	123.75	5,938,255	14,396	.3000	.0695	.0208
Riggers.....	22	5,447½	1,710.60	5,938,255	1,080	.3140	.9174	.2881
Hook tenders.....	8	2,050	897.25	5,938,255	2,897	.4377	.3452	.1511
Hook tenders, landing.....	12	2,717½	863.50	5,938,255	2,185	.3178	.4576	.1454
Night watchmen.....	3	940	211.45	5,938,255	6,317	.2249	.1583	.0356
Machinists.....	2	590	221.60	5,938,255	10,065	.3756	.0994	.0373
Total.....	91	22,955	6,965.45	5,938,255	259	.3042	3.8656	1.1730
Transportation and unloading:								
Engineers.....	3	846	380.70	5,938,255	7,019	.4500	.1425	.0641
Firemen.....	3	856	231.10	5,938,255	6,937	.2700	.1442	.0389
Conductors.....	3	892	356.80	5,938,255	6,657	.4000	.1502	.0601
Brakemen.....	7	1,898	569.40	5,938,255	3,129	.3000	.3196	.0959
Hostler.....	1	310	85.00	5,938,255	19,156	.2742	.0522	.0143
Wiper.....	1	310	50.00	5,938,255	19,156	.1613	.0522	.0084
Lineman.....	1	270	94.50	5,938,255	21,994	.3500	.0455	.0159
Total.....	19	5,382	1,767.50	5,938,255	1,103	.3284	.9063	.2978
Maintenance of transportation.....	28	7,385	1,533.10	5,938,255	804	.2076	1.2436	.2582

1 Only the redwood timber is peeled, but the cost is here spread over all the timber cut.

In the logging operations of this establishment, redwood, white pine and fir were being cut. Under "Felling and log making" in the table above, it is seen that there were 55 choppers and fellers, whose job is to notch the trees and saw them down. During the period under observation, choppers and fellers worked a total of 13,775 hours; the average hourly wage was 29¼ cents; the trees cut during the period yielded 5,938,255 board feet when manufactured into lumber. This amounted to 431 board feet per one-man hour in the occupation of chopping and felling. In other words, each chopper and feller in each hour he worked did his part on what would

be 431 board feet of lumber in the pile when all the other operations had been performed by other men.

Expressing the productivity of the chopper and feller in terms of 1,000 board feet, it is found that the time cost of felling the trees is practically two and one-third hours, one-man time, per 1,000 board feet of lumber. In other words, each member of the crew required on the average two and one-third hours to fell trees enough to make eventually 1,000 board feet of sawed lumber. The labor cost in wages of felling trees is seen to be \$0.6786 per 1,000 board feet of lumber.

In a similar manner the productivity of labor and labor cost is shown for each process and occupation involved in converting the tree into logs and delivering them at the log pond or yard of the sawmill.

The cost of succeeding processes by which the logs are converted into lumber and the lumber piled in the yard is shown in the following table:

PRODUCTIVITY AND COST IN SAWMILL OPERATIONS: ESTABLISHMENT NO. 21.

[*Equipment*.—Two single-cut band saws; 1 double-cut band saw; 1 sash gang saw; 3 edgers; 3 trimmers. *Material*.—Number of logs, 4,623; log scale, 7,927,000 board feet; log average, 1,713.9 board feet; kinds of timber: redwood 64.1 per cent; white pine, fir, and spruce, 35.9 per cent. *Product*.—Lumber tally, 5,975,000 board feet; prevailing sizes, four and eight quarter in stock widths.]

Occupation, process, or machine.	Full-time positions.	Total one-man hours.	Total wages.	Total output in board feet.	Output in board feet per one-man hour.	Wage cost per one-man hour.	Cost per 1,000 board feet produced.	
							One-man hours.	Wages.
Sawmill: Foreman.....	1	270	\$185.00	5,975,000	22,130	\$0.6852	0.0452	\$0.0310
Log pond or yard.....	9	2,464	652.90	5,975,000	2,425	.2650	.4124	.1093
Sawmill deck:								
Scalers.....	2	351	147.20	5,975,000	17,023	.4194	.0587	.0246
Splitters.....	1	296	88.80	5,975,000	20,186	.3000	.0495	.0149
Drag-sawmen.....	2	536	131.35	5,975,000	11,147	.2451	.0897	.0220
Total.....	5	1,183	367.35	5,975,000	5,051	.3105	.1980	.0615
Band saw No. 1:								
Sawyer.....	1	266	125.00	1,877,055	7,057	.4699	.1417	.0666
Setter.....	1	266	73.15	1,877,055	7,057	.2750	.1417	.0390
Dogger.....	1	266	73.15	1,877,055	7,057	.2750	.1417	.0354
Tail sawyer.....	1	266	66.50	1,877,055	7,057	.2500	.1417	.0354
Total.....	4	1,064	337.80	1,877,055	1,764	.3175	.5668	.1800
Band saw No. 2:								
Sawyer.....	1	266	118.40	1,716,147	6,652	.4451	.1550	.0690
Setter.....	1	266	73.15	1,716,147	6,652	.2750	.1550	.0426
Dogger.....	1	266	59.85	1,716,147	6,652	.2250	.1550	.0349
Tail sawyer.....	1	266	66.50	1,716,147	6,652	.2500	.1550	.0387
Total.....	4	1,064	317.90	1,716,147	1,613	.2988	.6200	.1852
Band saw No. 3 (double-cut):								
Sawyer.....	1	270	162.00	2,381,798	8,821	.6000	.1134	.0680
Setter.....	1	270	74.25	2,381,798	8,821	.2750	.1134	.0312
Dogger.....	1	270	60.75	2,381,798	8,821	.2250	.1134	.0255
Tail sawyer.....	1	270	67.50	2,381,798	8,821	.2500	.1134	.0283
Total.....	4	1,080	364.50	2,381,798	2,205	.3375	.4534	.1530
Gang saw:								
Sawyer.....	1	270	81.00	5,975,000	22,130	.3000	.0452	.0136
Sawyer's helpers.....	4	1,080	222.75	5,975,000	5,532	.2063	.1808	.0373
Total.....	5	1,350	303.75	5,975,000	4,426	.2250	.2259	.0508

PRODUCTIVITY AND COST IN SAWMILL OPERATIONS: ESTABLISHMENT NO. 21—Con.

Occupation, process, or machine.	Full-time positions.	Total one-man hours.	Total wages.	Total output in board feet.	Output in board feet per one-man hour.	Wage cost per one-man hour.	Cost per 1,000 board feet produced.	
							One-man hours.	Wages.
Total band saws:								
Sawyers.....	3	802	\$405.40	5,975,000	7,450	\$0.5055	0.1342	\$0.0678
Settlers.....	3	802	220.55	5,975,000	7,450	.2750	.1342	.0369
Doggers.....	3	802	193.75	5,975,000	7,450	.2416	.1342	.0324
Tail sawyers.....	3	802	200.50	5,975,000	7,450	.2500	.1342	.0336
Total.....	12	3,208	1,020.20	5,975,000	1,863	.3180	.5369	.1707
Total sawing (head, gang, resaw).								
	17	4,558	1,323.95	5,975,000	1,311	.2905	.7628	.2216
Edger No. 1:								
Edgerman.....	1	266	86.45	1,877,055	7,057	.3250	.1417	.0461
Edgerman's helpers.....	2	532	113.05	1,877,055	3,528	.2125	.2834	.0602
Total.....	3	798	199.50	1,877,055	2,352	.2500	.4251	.1063
Edger No. 2:								
Edgerman.....	1	266	86.45	1,716,147	6,652	.3250	.1550	.0504
Edgerman's helpers.....	2	532	113.05	1,716,147	3,226	.2125	.3100	.0659
Total.....	3	798	199.50	1,716,147	2,151	.2500	.4650	.1162
Edger No. 3:								
Edgerman.....	1	270	87.75	2,381,798	8,821	.3250	.1134	.0368
Edgerman's helpers.....	2	540	114.75	2,381,798	4,411	.2125	.2207	.0482
Total.....	3	810	202.50	2,381,798	2,940	.2500	.3401	.0850
Total edging:								
Edgerman.....	3	802	260.65	5,975,000	7,450	.3250	.1342	.0436
Edgerman's helpers.....	6	1,604	340.85	5,975,000	3,725	.2125	.2685	.0570
Total.....	9	2,406	601.50	5,975,000	2,483	.2500	.4027	.1007
Trimmer No. 1:								
Operator.....	1	266	73.15	1,877,055	7,057	.2750	.1417	.0390
Operator's helper.....	1	266	62.51	1,877,055	7,057	.2350	.1417	.0333
Total.....	2	532	135.66	1,877,055	3,528	.2550	.2834	.0723
Trimmer No. 2:								
Operator.....	1	266	66.50	1,716,147	6,452	.2500	.1550	.0387
Operator's helper.....	1	266	53.20	1,716,147	6,452	.2000	.1550	.0310
Total.....	2	532	119.70	1,716,147	3,226	.2250	.3100	.0697
Trimmer No. 3:								
Operator.....	1	270	74.25	2,381,798	8,821	.2750	.1134	.0312
Operator's helper.....	1	270	54.00	2,381,798	8,821	.2000	.1134	.0227
Total.....	2	540	128.25	2,381,798	4,411	.2375	.2267	.0538
Total trimming:								
Operators.....	3	802	213.90	5,975,000	7,450	.2667	.1342	.0358
Operators' helpers.....	3	802	169.71	5,975,000	7,450	.2116	.1342	.0284
Total.....	6	1,604	383.61	5,975,000	3,725	.2392	.2685	.0642
Refuse—slasher, hog, burner.....								
	2	540	114.75	5,975,000	11,065	.2125	.0904	.0192
Filers.....								
	4	1,080	621.00	5,975,000	5,532	.5750	.1808	.1039
Power and oiling.....								
	22	5,965	1,757.35	5,975,000	1,002	.2946	.9983	.2941
Repair.....								
	5	1,382	505.60	5,975,000	4,323	.3658	.2313	.0846
Night watch and fire protection.....								
	5	1,280	288.00	5,975,000	4,668	.2250	.2142	.0482
Clean up and miscellaneous.....								
	10	2,767	498.44	5,975,000	2,159	.1801	.4631	.0834
Sorting green lumber:								
Foreman.....	1	270	100.00	5,975,000	22,130	.3704	.0452	.0167
Tallyman.....	1	270	87.75	5,975,000	22,130	.3250	.0452	.0147
Graders.....	4	1,060	304.50	5,975,000	5,637	.2873	.1774	.0510
Sorters and loaders.....	41	11,017	2,488.55	5,975,000	542	.2259	1.8438	.4165
Total.....	47	12,617	2,890.80	5,975,000	474	.2291	2.1116	.4838
Yard—green lumber:								
Foreman.....	1	270	115.00	5,975,000	22,130	.4259	.0452	.0192
Transferring.....	5	1,345	298.30	5,975,000	4,442	.2218	.2251	.0490
Piling.....	46	12,378	2,485.97	5,975,000	483	.2008	2.0716	.4161

In the summary table which follows, occupation detail, total hours, total wages, and total output are omitted. For each process there is shown the output in board feet and the wage cost per one-man hour, and the cost in time and in wages per 1,000 board feet produced. It will be observed that in this establishment, and for the period selected, 19,686 hours of one man's time would be required to produce 1,000 board feet of lumber if he performed all the processes from the standing tree to lumber in the pile. The output in board feet per one-man hour from tree to lumber pile was 58 board feet. The average wages per one-man hour paid to all the occupations involved throughout the processes was \$0.2693. The cost in wages of all labor necessary to produce 1,000 board feet of lumber was \$5.3024.

SUMMARY OF PRODUCTIVITY AND COST IN LOGGING AND SAWMILL OPERATION
ESTABLISHMENT NO. 21.

Occupation, process, or machine.	Output in board feet per one-man hour.	Wage cost per one-man hour.	Cost per 1,000 board feet produced.	
			One-man hours.	Wages.
Logging:				
Foremen, scalers, general.....	3,472	\$0.3801	0.2880	\$0.1095
Felling and log making.....	215	.2732	4.6613	1.2734
Skidding, yarding, and loading.....	259	.3042	3.8656	1.1730
Transportation and unloading.....	1,103	.3284	.9063	.2976
Maintenance of transportation.....	804	.2076	1.2436	.2552
Total logging.....	91	.2838	10.9648	3.1117
Log pond or yard.....	2,425	.2650	.4124	.1093
Sawmill:				
Foremen.....	22,130	.6852	.0452	.0310
Deck.....	5,051	.3105	.1980	.0615
Sawing—head, gang, and resaw.....	1,311	.2905	.7628	.2216
Edging.....	2,483	.2500	.4027	.1007
Trimming.....	3,725	.2392	.2685	.0642
Refuse—slasher, hog, burner.....	11,065	.2125	.0904	.0192
Filing.....	5,532	.5750	.1808	.1039
Power and oiling.....	1,002	.2946	.9983	.2941
Repair.....	4,323	.3658	.2313	.0846
Night watch and fire protection.....	4,668	.2250	.2142	.0452
Clean-up and miscellaneous.....	2,159	.1801	.4631	.0334
Total sawmill.....	259	.2855	3.8563	1.1124
Sorting.....	474	.2291	2.1116	.4838
Yard—green lumber:				
Foremen.....	22,130	.4259	.0452	.0192
Transferring.....	4,442	.2218	.2251	.0499
Piling.....	483	.2008	2.0716	.4161
Total yard.....	427	.2072	2.3419	.4852
Total, tree to lumber pile.....	58	.2693	19.6860	5.3024

The two following summary tables show the productivity of labor and labor costs for each establishment covered by the investigation, in accordance with the classification of processes previously indicated:

SUMMARY OF PRODUCTIVITY AND COST IN 11 REPRESENTATIVE LOGGING ESTABLISHMENTS.

Estab-lishment No.	Cost unit.	Fore-man, scaler, general.	Felling and log making.	Skid-ding, yarding, and load-ing.	Trans-porta-tion and unload-ing.	Mainte-nance of transper-tation.
2	Output per one-man hour..... board feet..	1,750	102	116	327	315
	Cost per one-man hour..... wages..	\$0.2708	\$0.1598	\$0.1744	\$0.2372	\$0.1649
	Cost per 1,000 board } one-man hours..	.5715	9.8043	8.6305	3.0621	3.1785
	feet produced..... } wages.....	\$0.1548	\$1.5667	\$1.5054	\$0.7262	\$0.5242
13	Output per one-man hour..... board feet..	2,168	394	118	1,257	2,505
	Cost per one-man hour..... wages..	\$0.4512	\$0.3089	\$0.3062	\$0.4293	\$0.6550
	Cost per 1,000 board } one-man hours..	.4613	2.5381	8.4705	.7958	.3992
	feet produced..... } wages.....	\$0.2082	\$0.7839	\$2.5941	\$0.3417	\$0.2615
17	Output per one-man hour..... board feet..	1,122	283	222	782	212
	Cost per one-man hour..... wages..	\$0.3599	\$0.2967	\$0.3242	\$0.4413	\$0.1989
	Cost per 1,000 board } one-man hours..	.8910	3.5288	4.5073	1.2793	4.7274
	feet produced..... } wages.....	\$0.3207	\$1.0469	\$1.4614	\$0.5641	\$0.9403
18	Output per one-man hour..... board feet..	7,265	862	243	820	724
	Cost per one-man hour..... wages..	\$0.4524	\$0.3451	\$0.3124	\$0.3415	\$0.2704
	Cost per 1,000 board } one-man hours..	.1376	1.1598	4.1084	1.2199	1.3821
	feet produced..... } wages.....	\$0.0623	\$0.4993	\$1.2838	\$0.4166	\$0.3737
19	Output per one-man hour..... board feet..	5,006	599	288	3,360	3,713
	Cost per one-man hour..... wages..	\$0.4121	\$0.2844	\$0.2879	\$0.3654	\$0.2958
	Cost per 1,000 board } one-man hours..	.1998	1.6692	3.4751	.2977	.2693
	feet produced..... } wages.....	\$0.0823	\$0.4747	\$1.0005	\$0.1088	\$0.0796
20	Output per one-man hour..... board feet..	2,971	108	113	1,465	1,671
	Cost per one-man hour..... wages..	\$0.4061	\$0.2706	\$0.2912	\$0.2873	\$0.2453
	Cost per 1,000 board } one-man hours..	.3366	6.4843	8.5731	.6826	.5984
	feet produced..... } wages.....	\$0.1367	\$1.7543	\$2.5842	\$0.1961	\$0.1468
21	Output per one-man hour..... board feet..	3,472	215	259	1,103	804
	Cost per one-man hour..... wages..	\$0.3801	\$0.2732	\$0.3042	\$0.3284	\$0.2076
	Cost per 1,000 board } one-man hours..	.2880	4.6613	3.8656	.9063	1.2436
	feet produced..... } wages.....	\$0.1095	\$1.2734	\$1.1730	\$0.2976	\$0.2582
22	Output per one-man hour..... board feet..	1,752	264	148	566	216
	Cost per one-man hour..... wages..	\$0.2989	\$0.2422	\$0.2023	\$0.2116	\$0.1777
	Cost per 1,000 board } one-man hours..	.5708	3.7932	6.7596	1.7677	4.6310
	feet produced..... } wages.....	\$0.1706	\$0.9187	\$1.3675	\$0.3740	\$0.8231
24	Output per one-man hour..... board feet..	6,987	446	276	1,131	1,379
	Cost per one-man hour..... wages..	\$0.5255	\$0.1763	\$0.1848	\$0.1654	\$0.2183
	Cost per 1,000 board } one-man hours..	.1431	2.2442	3.7723	.8841	.7252
	feet produced..... } wages.....	\$0.0752	\$0.3957	\$0.6879	\$0.1462	\$0.1583
26	Output per one-man hour..... board feet..	1,025	406	151	239	207
	Cost per one-man hour..... wages..	\$0.2049	\$0.2256	\$0.2283	\$0.2483	\$0.1631
	Cost per 1,000 board } one-man hours..	.9754	2.4622	.6624	4.1869	4.8194
	feet produced..... } wages.....	\$0.1998	\$0.5555	\$1.5124	\$1.0398	\$0.7862
27	Output per one-man hour..... board feet..	15,925	1,231	241	1,542	10,131
	Cost per one-man hour..... wages..	\$0.8269	\$0.3128	\$0.3082	\$0.3084	\$0.2128
	Cost per 1,000 board } one-man hours..	.0628	.8122	4.1542	.6487	.9871
	feet produced..... } wages.....	\$0.0519	\$0.2540	\$1.2804	\$0.2000	\$0.2100

12890°—17—6

SUMMARY OF PRODUCTIVITY AND COST IN

Es- tab- lish- ment No.	Cost unit.	Saw- mill fore- man.	Log pond or yard.	Saw- mill deck.	Sawing: head, gang, resaw.	Edging.	Trim- ming.
1	Output per one-man hour..... board feet.....	10,941	2,761	6,119	1,035	2,492	6,119
	Cost per one-man hour..... wages.....	\$0.8000	\$0.1697	\$0.2125	\$0.3569	\$0.2602	\$0.3000
	Cost per 1,000 board feet produced..... } one-man hours } wages.....	.0914 } \$0.0731 }	.3621 } \$0.0615 }	.1634 } \$0.0347 }	.9659 } \$0.3447 }	.4012 } \$0.1044 }	.1634 } \$0.0490 }
2	Output per one-man hour..... board feet.....	8,918	1,804	4,459	689	2,234	2,973
	Cost per one-man hour..... wages.....	\$0.6094	\$0.1874	\$0.2427	\$0.2779	\$0.1750	\$0.2000
	Cost per 1,000 board feet produced..... } one-man hours } wages.....	.1121 } \$0.0683 }	.5543 } \$0.1039 }	.2243 } \$0.0544 }	1.4507 } \$0.4032 }	.4477 } \$0.0783 }	.3364 } \$0.0673 }
3	Output per one-man hour..... board feet.....	11,739	2,890	11,739	1,098	2,935	2,935
	Cost per one-man hour..... wages.....	\$0.4231	\$0.2335	\$0.2692	\$0.3064	\$0.2550	\$0.2671
	Cost per 1,000 board feet produced..... } one-man hours } wages.....	.0552 } \$0.0360 }	.3460 } \$0.0808 }	.0852 } \$0.0229 }	.6108 } \$0.2791 }	.3407 } \$0.0869 }	.3407 } \$0.0910 }
4	Output per one-man hour..... board feet.....	4,634	2,713	4,634	1,159	2,317	2,317
	Cost per one-man hour..... wages.....	\$0.3819	\$0.2200	\$0.2450	\$0.3082	\$0.2473	\$0.2575
	Cost per 1,000 board feet produced..... } one-man hours } wages.....	.2158 } \$0.0824 }	.3686 } \$0.0811 }	.2158 } \$0.0529 }	.8631 } \$0.2660 }	.4316 } \$0.1067 }	.4316 } \$0.1111 }
5	Output per one-man hour..... board feet.....	11,109	2,777	3,703	926	1,851	2,777
	Cost per one-man hour..... wages.....	\$0.4615	\$0.1846	\$0.2423	\$0.2721	\$0.2500	\$0.2423
	Cost per 1,000 board feet produced..... } one-man hours } wages.....	.0900 } \$0.0415 }	.3601 } \$0.0665 }	.2701 } \$0.0654 }	1.0802 } \$0.2939 }	.5401 } \$0.1350 }	.3601 } \$0.0873 }
6	Output per one-man hour..... board feet.....	12,807	3,202	3,202	985	2,135	2,135
	Cost per one-man hour..... wages.....	\$0.3551	\$0.1846	\$0.2308	\$0.2904	\$0.2538	\$0.2538
	Cost per 1,000 board feet produced..... } one-man hours } wages.....	.0781 } \$0.0277 }	.3123 } \$0.0577 }	.3123 } \$0.0721 }	1.0151 } \$0.3009 }	.4685 } \$0.1189 }	.4685 } \$0.1189 }
7	Output per one-man hour..... board feet.....	5,768	2,883	1,922	721	2,883	1,441
	Cost per one-man hour..... wages.....	\$0.4807	\$0.1750	\$0.3090	\$0.2563	\$0.2875	\$0.3000
	Cost per 1,000 board feet produced..... } one-man hours } wages.....	.1734 } \$0.0834 }	.3469 } \$0.0607 }	.5203 } \$0.1561 }	1.3875 } \$0.3555 }	.3469 } \$0.0997 }	.6937 } \$0.2081 }
8	Output per one-man hour..... board feet.....	8,284	2,452	8,284	1,069	1,744	3,673
	Cost per one-man hour..... wages.....	\$0.4196	\$0.2424	\$0.2650	\$0.3961	\$0.2985	\$0.2699
	Cost per 1,000 board feet produced..... } one-man hours } wages.....	.1207 } \$0.0507 }	.4078 } \$0.0989 }	.1207 } \$0.0320 }	.9351 } \$0.3706 }	.5734 } \$0.1711 }	.2723 } \$0.0735 }
9	Output per one-man hour..... board feet.....	16,850	5,841	12,464	997	2,106	4,212
	Cost per one-man hour..... wages.....	\$0.4231	\$0.2450	\$0.3847	\$0.3491	\$0.2916	\$0.2875
	Cost per 1,000 board feet produced..... } one-man hours } wages.....	.0593 } \$0.0251 }	.1712 } \$0.0419 }	.0802 } \$0.0309 }	1.0030 } \$0.3501 }	.4748 } \$0.1384 }	.2374 } \$0.0682 }
10	Output per one-man hour..... board feet.....	19,333	2,682	6,536	940	1,401	3,222
	Cost per one-man hour..... wages.....	\$0.3846	\$0.2486	\$0.2851	\$0.3186	\$0.1800	\$0.2500
	Cost per 1,000 board feet produced..... } one-man hours } wages.....	.0517 } \$0.0199 }	.3728 } \$0.0927 }	.1530 } \$0.0436 }	1.0641 } \$0.3390 }	.7138 } \$0.1285 }	.3104 } \$0.0776 }
11	Output per one-man hour..... board feet.....	10,808	3,800	7,887	1,010	2,231	2,817
	Cost per one-man hour..... wages.....	\$0.4321	\$0.2572	\$0.2588	\$0.3704	\$0.2794	\$0.2438
	Cost per 1,000 board feet produced..... } one-man hours } wages.....	.0925 } \$0.0400 }	.2632 } \$0.0677 }	.1268 } \$0.0328 }	.9903 } \$0.3668 }	.4482 } \$0.1252 }	.3550 } \$0.0866 }
12	Output per one-man hour..... board feet.....	5,454	5,454	5,454	1,363	2,727	2,727
	Cost per one-man hour..... wages.....	\$0.5833	\$0.3085	\$0.2940	\$0.4955	\$0.3515	\$0.3050
	Cost per 1,000 board feet produced..... } one-man hours } wages.....	.1834 } \$0.1070 }	.1834 } \$0.0566 }	.1824 } \$0.0539 }	.7334 } \$0.3634 }	.3667 } \$0.1289 }	.3667 } \$0.1118 }
13	Output per one-man hour..... board feet.....	19,263	9,365	6,421	1,494	2,158	1,482
	Cost per one-man hour..... wages.....	\$0.7099	\$0.2929	\$0.3148	\$0.4508	\$0.3173	\$0.2636
	Cost per 1,000 board feet produced..... } one-man hours } wages.....	.0519 } \$0.0369 }	.1068 } \$0.0313 }	.1557 } \$0.0490 }	.6694 } \$0.3018 }	.4634 } \$0.1470 }	.6749 } \$0.1786 }
14	Output per one-man hour..... board feet.....	13,135	3,091	4,452	1,383	1,947	2,452
	Cost per one-man hour..... wages.....	\$0.6916	\$0.3243	\$0.3002	\$0.3882	\$0.2882	\$0.2540
	Cost per 1,000 board feet produced..... } one-man hours } wages.....	.0761 } \$0.0527 }	.3236 } \$0.1049 }	.2246 } \$0.0674 }	.7233 } \$0.2807 }	.5136 } \$0.1480 }	.4079 } \$0.1036 }
15	Output per one-man hour..... board feet.....	12,179	4,102	12,327	1,419	3,078	2,985
	Cost per one-man hour..... wages.....	\$0.4733	\$0.3058	\$0.2833	\$0.3216	\$0.2961	\$0.2930
	Cost per 1,000 board feet produced..... } one-man hours } wages.....	.0821 } \$0.0389 }	.2438 } \$0.0746 }	.0811 } \$0.0230 }	.7047 } \$0.2267 }	.3249 } \$0.0963 }	.3350 } \$0.0981 }
16	Output per one-man hour..... board feet.....	19,423	6,668	9,395	1,025	1,931	2,639
	Wages cost per one-man hour..... wages.....	\$0.6522	\$0.2763	\$0.3960	\$0.2778	\$0.2789	\$0.2518
	Cost per 1,000 board feet produced..... } one-man hours } wages.....	.0515 } \$0.0336 }	.1500 } \$0.0414 }	.1004 } \$0.0421 }	.9759 } \$0.2711 }	.5180 } \$0.1403 }	.3789 } \$0.0954 }

[714]

26 REPRESENTATIVE SAWMILL ESTABLISHMENTS.

Refuse: slasher, hog, burner.	Filing.	Power and oilng.	Repair.	Night watch and fire protec- tion.	Clean-up and mis- cella- neous.	Sorting green lumber.	Yard foreman, green lumber.	Trans- ferring green lumber.	Piling green lumber.	Es- tab- lish- ment No.
12.238 \$.0.2250 .0817 \$.0.0184	6,119 \$.0.7000 .1634 \$.0.1144	1,863 \$.0.3153 .5367 \$.0.1692	1,252 \$.0.2513 .7990 \$.0.2008	8,239 \$.0.2038 .1214 \$.0.0247	3,462 \$.0.1943 .2888 \$.0.0561	1,430 \$.0.2240 .6992 \$.0.1566	10,941 \$.0.5000 .0914 \$.0.0457	1,384 \$.0.1788 .7224 \$.0.1292	700 \$.0.1967 .1,4280 \$.0.2809	1
4,367 \$.0.1653 .2290 \$.0.0379	3,252 \$.0.4667 .3075 \$.0.1435	1,417 \$.0.2383 .7056 \$.0.1681	901 \$.0.2379 .1,0944 \$.0.2639	6,776 \$.0.1750 .1476 \$.0.0258	1,276 \$.0.1591 .7837 \$.0.1247	960 \$.0.1926 .1,0415 \$.0.2006	8,870 \$.0.4000 .1,127 \$.0.0451	1,809 \$.0.1740 .5528 \$.0.0962	576 \$.0.1949 .1,7374 \$.0.3386	2
3,750 \$.0.2066 .2667 \$.0.0551	3,854 \$.0.3753 .2595 \$.0.0974	2,489 \$.0.2601 .4017 \$.0.1045	2,396 \$.0.3889 .4174 \$.0.1623	7,131 \$.0.2200 .1,402 \$.0.0309	978 \$.0.2162 .1,0229 \$.0.2212	1,273 \$.0.2228 .7854 \$.0.1750	11,739 \$.0.3846 .0852 \$.0.0328	1,659 \$.0.2625 .6,029 \$.0.1366	777 \$.0.2376 .1,2863 \$.0.3057	3
2,251 \$.0.2200 .4442 \$.0.0977	3,862 \$.0.5708 .2589 \$.0.1478	1,324 \$.0.2462 .7552 \$.0.1859	4,181 \$.0.3200 .2392 \$.0.0765	3,835 \$.0.2450 .2607 \$.0.0639	3,476 \$.0.2331 .2877 \$.0.0671	927 \$.0.2186 .1,0789 \$.0.2358	----- ----- ----- -----	1,448 \$.0.2307 .6,905 \$.0.1593	580 \$.0.2397 .1,7236 \$.0.4132	4
2,777 \$.0.1962 .3601 \$.0.0706	3,703 \$.0.4231 .2701 \$.0.1143	1,383 \$.0.2201 .7229 \$.0.1591	791 \$.0.2128 .1,2648 \$.0.2692	3,337 \$.0.1946 .2,997 \$.0.0583	1,701 \$.0.1820 .8463 \$.0.1070	1,182 \$.0.1887 .0450 \$.0.1597	22,217 \$.0.2631 .0450 \$.0.0118	3,087 \$.0.1844 .3,239 \$.0.0597	529 \$.0.1809 .1,8916 \$.0.3422	5
1,830 \$.0.1846 .5466 \$.0.1009	6,404 \$.0.9231 .1562 \$.0.1442	2,081 \$.0.2730 .4805 \$.0.1312	1,968 \$.0.2488 .5081 \$.0.1264	10,953 \$.0.2072 .0,913 \$.0.0189	1,632 \$.0.1917 .8625 \$.0.1174	1,159 \$.0.1974 .0,913 \$.0.1702	10,953 \$.0.3224 .0,913 \$.0.0294	2,135 \$.0.1846 .4,685 \$.0.0865	608 \$.0.1855 .1,6457 \$.0.3054	6
2,883 \$.0.2090 .3469 \$.0.0694	5,766 \$.0.8000 .1734 \$.0.1387	1,797 \$.0.2860 .5564 \$.0.1592	1,521 \$.0.2854 .6576 \$.0.1745	2,471 \$.0.2375 .4,047 \$.0.0961	935 \$.0.1922 .1,0695 \$.0.2056	961 \$.0.2458 .1,0406 \$.0.2558	----- \$.0.2500 ----- \$.0.1734	1,441 \$.0.2250 .6,937 \$.0.1734	961 \$.0.2250 .1,0406 \$.0.2341	7
6,543 \$.0.2051 .1528 \$.0.0405	4,142 \$.0.5916 .2414 \$.0.1428	2,771 \$.0.2627 .3609 \$.0.0948	5,021 \$.0.3283 .1992 \$.0.0654	8,054 \$.0.2017 .1,242 \$.0.0250	2,420 \$.0.2341 .4,132 \$.0.0967	738 \$.0.2506 .1,3559 \$.0.3399	16,568 \$.0.4911 .0,604 \$.0.0296	1,349 \$.0.2204 .7,413 \$.0.1634	632 \$.0.2478 .1,5829 \$.0.3922	8
3,651 \$.0.2398 .2739 \$.0.0657	5,617 \$.0.6767 .1780 \$.0.1205	3,228 \$.0.2606 .3079 \$.0.0807	7,112 \$.0.2944 .1,406 \$.0.0414	2,923 \$.0.2501 .3,421 \$.0.0856	1,452 \$.0.2029 .6889 \$.0.1398	935 \$.0.2583 .1,0692 \$.0.2762	15,107 \$.0.2948 .0,662 \$.0.0195	2,206 \$.0.2225 .4,533 \$.0.1009	783 \$.0.2596 .1,2764 \$.0.3314	9
5,230 \$.0.2250 .1912 \$.0.0430	7,733 \$.0.6600 .1,293 \$.0.0853	3,751 \$.0.2631 .2666 \$.0.0701	6,765 \$.0.3637 .1,478 \$.0.0538	14,915 \$.0.2284 .0,670 \$.0.0153	3,515 \$.0.2508 .2,845 \$.0.0714	1,152 \$.0.2530 .8684 \$.0.2197	38,665 \$.0.5128 .0,259 \$.0.0133	1,952 \$.0.2537 .5,124 \$.0.1300	831 \$.0.3178 .1,2034 \$.0.3825	10
3,722 \$.0.2250 .2687 \$.0.0604	5,612 \$.0.5750 .1782 \$.0.1025	2,924 \$.0.2829 .3,420 \$.0.0668	6,610 \$.0.3225 .1,513 \$.0.0488	13,265 \$.0.2244 .0,754 \$.0.0169	2,915 \$.0.2123 .3,430 \$.0.0728	1,216 \$.0.2471 .8,222 \$.0.2031	22,448 \$.0.3205 .0,445 \$.0.0143	1,473 \$.0.2359 .6,790 \$.0.1602	702 \$.0.2998 .1,4243 \$.0.4271	11
2,689 \$.0.3413 .3718 \$.0.1269	5,454 \$.0.6784 .1,834 \$.0.1244	1,745 \$.0.3896 .5732 \$.0.2233	26,735 \$.0.4069 .0,374 \$.0.0152	7,791 \$.0.2971 .1,283 \$.0.0381	4,110 \$.0.3131 .2,433 \$.0.0762	1,120 \$.0.2891 .8,926 \$.0.2581	10,100 \$.0.3704 .0,990 \$.0.0307	1,801 \$.0.3140 .5,552 \$.0.1743	1,788 \$.0.4828 .5,592 \$.0.2700	12
19,263 \$.0.3055 .0510 \$.0.0159	7,173 \$.0.8338 .1,304 \$.0.1163	2,560 \$.0.3840 .3,907 \$.0.1500	2,300 \$.0.3997 .4,184 \$.0.1672	4,352 \$.0.3441 .2,298 \$.0.0791	9,631 \$.0.3032 .1,038 \$.0.0315	647 \$.0.2781 .1,5466 \$.0.4300	37,986 \$.0.6000 .0,263 \$.0.0158	2,385 \$.0.3352 .4,192 \$.0.1405	581 \$.0.3107 .1,7263 \$.0.5304	13
6,709 \$.0.2510 .1490 \$.0.0374	5,254 \$.0.6600 .1,903 \$.0.1142	2,894 \$.0.2913 .3,455 \$.0.1006	6,468 \$.0.4835 .1,546 \$.0.0747	9,242 \$.0.4915 .1,082 \$.0.0532	6,567 \$.0.2628 .1,523 \$.0.0400	949 \$.0.2724 .1,0534 \$.0.2870	26,270 \$.0.4423 .0,381 \$.0.0168	1,658 \$.0.2765 .6,032 \$.0.1668	1,054 \$.0.3532 .9,486 \$.0.3351	14
12,327 \$.0.2583 .0811 \$.0.0210	6,365 \$.0.5205 .1571 \$.0.0818	2,741 \$.0.3630 .3,649 \$.0.1325	5,539 \$.0.4142 .1,805 \$.0.0748	7,854 \$.0.2875 .1,273 \$.0.0366	1,739 \$.0.2511 .5,751 \$.0.1444	1,450 \$.0.2958 .6,897 \$.0.2040	31,438 \$.0.3846 .0,318 \$.0.0122	2,891 \$.0.2758 .3,459 \$.0.0954	1,013 \$.0.3470 .9,973 \$.0.3426	15
4,425 \$.0.2608 .2260 \$.0.0589	5,598 \$.0.4288 .1786 \$.0.0766	3,243 \$.0.2601 .3,083 \$.0.0802	1,174 \$.0.3125 .8,515 \$.0.2917	3,384 \$.0.2415 .2,955 \$.0.0713	1,963 \$.0.1915 .5,095 \$.0.0376	549 \$.0.2268 .1,8207 \$.0.4129	15,870 \$.0.3000 .0,630 \$.0.0189	1,743 \$.0.2157 .5,737 \$.0.1226	664 \$.0.2081 .1,5065 \$.0.3136	16

[715]

SUMMARY OF PRODUCTIVITY AND COST IN

Es- tab- lish- ment No.	Cost unit.	Saw- mill fore- man.	Log pond or yard.	Saw- mill deck.	Sawing: head, gang, resaw.	Edging.	Trim- ming.
17	Output per one-man hour..... board feet..	12, 459	3, 045	18, 938	1, 060	3, 948	3, 510
	Cost per one-man hour..... wages..	\$0.5032	\$0.2853	\$0.2354	\$0.2649	\$0.2598	\$0.2489
	Cost per 1,000 board} one-man hours..	.0803	.3284	.0528	.9431	.2533	.2849
	feet produced....} wages.....	\$0.0404	\$0.0937	\$0.0124	\$0.2498	\$0.0658	\$0.0709
8	Output per one-man hour..... board feet..	26, 645	4, 869	13, 434	1, 219	2, 416	2, 770
	Cost per one-man hour..... wages..	\$0.5729	\$0.3083	\$0.2845	\$0.3072	\$0.2774	\$0.2806
	Cost per 1,000 board} one-man hours..	.0375	.2054	.0744	.8204	.4139	.3611
	feet produced....} wages.....	\$0.0215	\$0.0633	\$0.0212	\$0.2520	\$0.1148	\$0.1013
19	Output per one-man hour..... board feet..	14, 066	10, 326	11, 078	1, 167	2, 771	3, 694
	Cost per one-man hour..... wages..	\$0.4271	\$0.2366	\$0.2561	\$0.3606	\$0.2803	\$0.2583
	Cost per 1,000 board} one-man hours..	.0711	.0908	.0903	.8573	.3609	.2707
	feet produced....} wages.....	\$0.0304	\$0.0229	\$0.0231	\$0.3091	\$0.1012	\$0.0699
20	Output per one-man hour..... board feet..	18, 784	2, 790	3, 172	1, 189	1, 586	2, 379
	Cost per one-man hour..... wages..	\$0.4630	\$0.2651	\$0.2416	\$0.3005	\$0.2633	\$0.2437
	Cost per 1,000 board} one-man hours..	.0532	.3585	.3152	.8410	.6306	.4204
	feet produced....} wages.....	\$0.0246	\$0.0950	\$0.0762	\$0.2527	\$0.1660	\$0.1024
21	Output per one-man hour..... board feet..	22, 130	2, 425	5, 051	1, 311	2, 483	3, 725
	Cost per one-man hour..... wages..	\$0.6852	\$0.2650	\$0.3105	\$0.2905	\$0.2500	\$0.2392
	Cost per 1,000 board} one-man hours..	.0452	.4124	.1980	.7628	.4027	.2685
	feet produced....} wages.....	\$0.0310	\$0.1093	\$0.0615	\$0.2216	\$0.1007	\$0.0642
22	Output per one-man hour..... board feet..	6, 521	1, 881	2, 717	815	815	2, 717
	Cost per one-man hour..... wages..	\$0.6400	\$0.1995	\$0.2167	\$0.3250	\$0.1310	\$0.2087
	Cost per 1,000 board} one-man hours..	.1533	.5316	.3681	1.2268	1.2268	.3681
	feet produced....} wages.....	\$0.0981	\$0.1061	\$0.0797	\$0.3987	\$0.1608	\$0.0768
23	Output per one-man hour..... board feet..	8, 564	4, 034	5, 178	1, 121	1, 840	2, 892
	Cost per one-man hour..... wages..	\$0.6250	\$0.1755	\$0.2006	\$0.2822	\$0.2259	\$0.1786
	Cost per 1,000 board} one-man hours..	.1168	.2479	.1931	.9881	.5434	.3458
	feet produced....} wages.....	\$0.0730	\$0.0435	\$0.0387	\$0.2789	\$0.1228	\$0.0618
24	Output per one-man hour..... board feet..	9, 314	2, 194	4, 903	986	1, 822	3, 553
	Cost per one-man hour..... wages..	\$0.4045	\$0.1555	\$0.1542	\$0.2410	\$0.1976	\$0.1917
	Cost per 1,000 board} one-man hours..	.1074	.4559	.2040	1.0145	.5490	.2814
	feet produced....} wages.....	\$0.0434	\$0.0709	\$0.0314	\$0.2445	\$0.1085	\$0.0539
25	Output per one-man hour..... board feet..	8, 763	2, 340	6, 669	767	1, 819	2, 858
	Cost per one-man hour..... wages..	\$0.4007	\$0.1674	\$0.1700	\$0.2205	\$0.1765	\$0.1576
	Cost per 1,000 board} one-man hours..	.1141	.4273	.1499	1.3045	.5498	.3499
	feet produced....} wages.....	\$0.0457	\$0.0716	\$0.0255	\$0.2877	\$0.0970	\$0.0551
26	Output per one-man hour..... board feet..	16, 457	3, 291	8, 228	823	2, 743	4, 114
	Cost per one-man hour..... wages..	\$0.5830	\$0.2050	\$0.2625	\$0.2635	\$0.2167	\$0.1763
	Cost per 1,000 board} one-man hours..	.0608	.3038	.1215	1.2153	.3646	.2431
	feet produced....} wages.....	\$0.0354	\$0.0623	\$0.0319	\$0.3203	\$0.0790	\$0.0428

26 REPRESENTATIVE SAWMILL ESTABLISHMENTS—Concluded.

Refuse: slasher, hog, burner.	Filing.	Power and oiling.	Repair.	Night watch and fire protec- tion.	Clean-up and mis- cella- neous.	Sorting green lumber.	Yard foreman, green lumber.	Transf- erring green lumber.	Piling green lumber.	Es- tab- lish- ment No.
5,205 \$0.2069 .1921 \$0.0397	6,009 \$0.4711 .1664 \$0.0784	1,305 \$0.2919 .7666 \$0.2237	3,773 \$0.2881 .2650 \$0.0764	3,410 \$0.2390 .2933 \$0.0701	2,876 \$0.2170 .3477 \$0.0754	535 \$0.2221 .18706 \$0.4155	37,327 \$0.5000 .0268 \$0.0134	1,883 \$0.2212 .5311 \$0.1175	407 \$0.2314 2,4586 \$0.5863	17
9,281 \$0.2491 .1077 \$0.0268	7,066 \$0.5851 .1415 \$0.0828	2,764 \$0.3083 .3619 \$0.1116	1,230 \$0.3441 .8130 \$0.2798	20,628 \$0.2581 .0485 \$0.0125	1,366 \$0.2494 .7318 \$0.1825	534 \$0.2393 .18718 \$0.4478	24,595 \$0.3846 .0407 \$0.0156	1,430 \$0.2619 .6994 \$0.1831	782 \$0.2361 1,2787 \$0.3018	18
3,680 \$0.2199 .2717 \$0.0679	5,023 \$0.4663 .1991 \$0.0928	3,282 \$0.3137 .3047 \$0.0956	4,785 \$0.4842 .2090 \$0.1012	6,551 \$0.2719 .1526 \$0.0415	2,829 \$0.2193 .3535 \$0.0775	1,382 \$0.3007 .7237 \$0.2176	36,060 \$0.4630 .0277 \$0.0128	1,274 \$0.2448 .7848 \$0.1921	1,112 \$0.4433 .8989 \$0.3985	19
3,172 \$0.1983 .3153 \$0.0625	6,343 \$0.7430 .1576 \$0.1171	1,144 \$0.2456 .8739 \$0.2146	3,687 \$0.3438 .2712 \$0.0932	2,172 \$0.2266 .4604 \$0.1043	2,131 \$0.2006 .4693 \$0.0942	583 \$0.2085 .17153 \$0.3576	20,616 \$0.3528 .0485 \$0.0171	9,392 \$0.2500 .1065 \$0.0266	497 \$0.2019 2,0106 \$0.4060	20
11,065 \$0.2125 .0904 \$0.0192	5,532 \$0.3750 .1808 \$0.1039	1,002 \$0.2946 .9983 \$0.2941	4,323 \$0.3658 .2313 \$0.0846	4,668 \$0.2250 .2142 \$0.0482	2,159 \$0.1801 .4631 \$0.0834	474 \$0.2291 .21116 \$0.4838	22,130 \$0.4259 .0452 \$0.0192	4,442 \$0.2218 .2251 \$0.0499	483 \$0.2008 2,0716 \$0.4161	21
1,996 \$0.1622 .5010 \$0.0813	4,076 \$0.5000 .2454 \$0.1227	1,102 \$0.2637 .9073 \$0.2438	2,115 \$0.2200 .4728 \$0.1040	1,778 \$0.1689 .5623 \$0.0950	1,412 \$0.2004 .7080 \$0.1419	773 \$0.1711 .12933 \$0.2213	6,521 \$0.3850 .1534 \$0.0590	864 \$0.1601 1,1579 \$0.1853	714 \$0.3750 1,4004 \$0.5252	22
3,374 \$0.1787 .2964 \$0.0530	5,060 \$0.5125 .1976 \$0.1012	1,999 \$0.2808 .5003 \$0.1405	4,123 \$0.3502 .2425 \$0.0922	7,091 \$0.2146 .1410 \$0.0363	2,020 \$0.1666 .4949 \$0.0824	1,447 \$0.1879 .6912 \$0.1299	12,579 \$0.3846 .0795 \$0.0306	1,438 \$0.1521 .6953 \$0.1058	515 \$0.1907 1,9423 \$0.3703	23
2,896 \$0.1453 .3454 \$0.0502	5,242 \$0.4984 .1907 \$0.0951	2,479 \$0.2117 .4034 \$0.0854	3,282 \$0.2329 .3047 \$0.0710	5,711 \$0.2107 .1751 \$0.0369	1,270 \$0.1614 .7873 \$0.1271	844 \$0.1475 .1852 \$0.1747	11,070 \$0.3846 .0903 \$0.0347	1,230 \$0.1500 .8130 \$0.1220	692 \$0.1874 1,4457 \$0.2709	24
4,860 \$0.1475 .2058 \$0.0304	5,002 \$0.5300 .1999 \$0.1060	1,116 \$0.1995 .8963 \$0.1788	4,257 \$0.2933 .2349 \$0.0689	17,150 \$0.2643 .0583 \$0.0154	2,287 \$0.1424 .4373 \$0.0623	789 \$0.2674 .12670 \$0.3387	17,324 \$0.3250 .0577 \$0.0188	1,171 \$0.1155 .8543 \$0.0987	560 \$0.1452 1,7846 \$0.2591	25
6,583 \$0.1560 .1519 \$0.0237	5,485 \$0.6667 .1823 \$0.1215	1,371 \$0.3273 .7292 \$0.2387	3,827 \$0.2768 .2613 \$0.0723	3,501 \$0.1489 .2856 \$0.0425	2,006 \$0.1594 .4983 \$0.0794	694 \$0.1729 .14402 \$0.2491	16,457 \$0.2750 .0608 \$0.0167	1,349 \$0.1757 .7413 \$0.1302	713 \$0.1844 1,4035 \$0.2588	26

ORDERS OF THE KANSAS INDUSTRIAL WELFARE COMMISSION REGARDING THE EMPLOYMENT OF WOMEN.

In 1915 Kansas enacted a law declaring that inadequate wages, long hours, and unsanitary conditions of labor exercise a pernicious effect on the health and welfare of women and children. This act also provided for an industrial welfare commission which was authorized to establish such reasonable wages, hours, and sanitary conditions as would carry into effect the intent and purpose of the law.¹

In pursuance of the authority thus granted three important orders have been issued by the industrial welfare commission. Two of these orders have to do with laundries, one establishing a nine-hour day and the other providing for a sanitary code. The third order establishes a nine-hour day for mercantile establishments. No minimum wage decrees had been issued up to September 1, 1917, but the commission at that time anticipated that a minimum wage would be established for mercantile establishments in the very near future.

The laundry decree (effective Apr. 6, 1917) provides that nine hours shall constitute a regular day's work for female workers in laundries, and that no female person shall be required to work more than 10 hours in any one day, nor more than 54 hours in any one week. Any such person working more than nine hours in any one day shall receive adequate compensation for such overtime.

The sanitary code for laundries (effective Dec. 24, 1916) includes provisions for proper lighting, dressing rooms, toilet and washing facilities, seats, drinking fountains, exhaust fans, etc. These regulations establish no very definite standards of sanitation or comfort. They merely provide that "lighting shall be adequate," "suitable seats must be provided in sufficient number," etc.

The 9-hour ruling for mercantile establishments (effective Apr. 13, 1917) prohibits the employment of any female person, except during 10 consecutive hours of any one day of 24 hours, and for not more than 9 hours during the said 10 hours. It further provides that no female shall be employed for more than six days during the week, nor later than 9 o'clock at night, except that during one day in each week females may be employed during 12 consecutive hours, but not more than 9 hours in any one day. The purpose of this exception was to permit retail stores in small country towns to keep open after 9 o'clock on Saturday nights in order to serve their rural patrons who found it inconvenient to do their purchasing at any other time. Numerous complaints were made against this ruling but the commission, after repeated hearings, refused to modify the order.

¹ The following States have provided for minimum wage or industrial welfare commission laws: Arizona, Arkansas, California, Colorado, Kansas, Massachusetts, Minnesota, Nebraska, Oregon, Utah, Washington, and Wisconsin.

RESTRICTIONS UPON NIGHTWORK BY WOMEN IN FACTORIES AND LAUNDRIES IN WISCONSIN.

Some account has already been given in recent articles in the MONTHLY REVIEW of the controversy which arose in the State of Wisconsin relative to the power of the State industrial commission to regulate the hours of labor of employed women.¹ The legislature of that State provided by an act (ch. 381, Acts of 1913) for a maximum of 10 hours per day and 55 per week for women employed by day, and 8 hours per night and 48 per week for those employed at nightwork. Day work was defined as work done between 6 a. m. and 8 p. m., with the proviso that work might be done after 8 o'clock on one night in the week without being considered nightwork. The act also authorized the commission to classify places of employment, and to issue general or special orders fixing a period or periods of time, or hours of beginning and ending work during any day, night, or week, which shall be necessary to protect the life, health, safety, or welfare of any female employed therein.

The constitutionality of this law was attacked in the case *State v. Lange Canning Co.* (157 N. W. 777), and the supreme court of the State held (May, 1916) that the act was unconstitutional in so far as it delegated rule-making authority to the commission. But on a rehearing of the same case (160 N. W. 67) the court withdrew that portion of its opinion which declared the statute unconstitutional, leaving with the commission the power intended to be conferred upon it by the legislature.

Thereupon the commission, in pursuance of its duties and on petition of the Wisconsin Federation of Labor, the Milwaukee Council of Social Agencies, and the Wisconsin Consumers' League, held hearings during the months of March and April of this year for the purpose of securing data on the subject of regulations that the commission might issue in this field. The conclusion was reached that orders might properly be issued on the subject of nightwork, the matter of any further limitation of the hours of employment by day being left for further consideration.

The commission, in reaching its conclusions, quoted the statute conferring upon it authority to classify and regulate the hours of labor in "any place of employment," citing also the statutory definition of this term, which is declared to "mean and include any manufactory, mercantile, or mechanical establishment, laundry, restaurant, confectionery store, or telegraph or telephone office or exchange, or any express or transportation establishment." It was recited that the investigation was completed, so far as factories and laundries were

¹ MONTHLY REVIEW, July, 1916, pp. 136-147; February, 1917, pp. 208, 209.

concerned, and that the commission was prepared to enter its order forbidding nightwork therein. Pea canneries were excluded from classification as manufactories, so that the present orders do not apply to them. Other investigations are to be had as regards the other places of employment named and the limitation of the hours of labor in all employments.

It was pointed out that the statute itself made a general classification, but that some exceptions or some classifications might be desirable. Work in factories is largely done through the agency of machines and is continuous throughout the year under conditions "quite generally standardized to secure speed and efficiency." The abnormality of nightwork and its injurious effects on the health of women were pointed out, citing the opinion of the New York Court of Appeals (*People v. Charles Schweinler Press* (1915), 214 N. Y. 395, 108 N. E. 639).

Mention was made of the insistent argument that because of the abnormal industrial conditions resulting from the present war the commission should delay its findings and orders until normal conditions are restored. Reasons for failing to act on this suggestion were given, one being that work in excess of the health and strength of the women employed would result not only in prejudice to their health and welfare, but would also be found prejudicial to output. "Such has been the experience of all those who have given the matter real consideration." The necessity for increased output should be met, it was said, rather by securing new workers to fill the demand, which could be done by adopting the "obviously right" method of paying female labor the same rates as paid men for like service and like output.

As to laundries, additional reasons were found in the excessive heat and excessive humidity, besides the arguments effective with regard to factory work. The following orders were therefore issued as of June 29, 1917:

ORDER No. 1.—Nightwork for women in and about manufactories and laundries in this State is hereby forbidden. Nightwork is declared to be work performed between the hours of 6 p. m. of one day and 6 a. m. of the following day.

ORDER No. 2.—Daywork, for the purpose of this order, shall be construed as work performed within the hours of 6 a. m. and 6.30 p. m. of the same day, except it may be permissible in all places of employment other than manufactories and laundries, to work one night per week after 6.30 p. m. without such time being classified as nightwork. If work is done after 6.30 p. m. more than one night per week, then all work performed within the week shall be considered nightwork.

ORDER No. 3.—The employment of women at nightwork in any place of employment for more than eight hours per night or more than 48 hours per week is prohibited as being prejudicial to the life, health, safety, and welfare of such women.

One member of the commission, the chairman, J. D. Beck, while joining in the opinions and orders regarding nightwork, expressed his regret that the eight-hour maximum for the employment of females in manufacturing establishments was not made to apply also to daywork.

INCREASED WAGES FOR WOMEN MUNITION WORKERS IN GREAT BRITAIN.¹

The Ministry of Munitions has announced advances in the wages of all women and girls employed on munitions work in controlled establishments and in uncontrolled establishments to which orders of the ministry regulating women's wages have already been applied. Women of 18 years of age and over will receive an advance of 2s. 6d. [61 cents] per week and girls under 18 an advance of 1s. 3d. [30 cents] per week. These advances will apply both to time workers and to workers on systems of payment by results. They will be payable to all women and girls over and above their weekly earnings.

Controlled establishments in Ireland are also to come under the orders regulating the wages of women and girls employed on munitions work which have been applied to establishments in similar trades in Great Britain. The ministry is considering the case of uncontrolled establishments employing women and girls on munitions work, with a view to seeing whether its powers in respect of the wages of such women and girls can be exercised in those establishments also.

These advances in the wages of women munition workers are intended to meet the increased cost of living and are the result of representations made by several trade-unions, mostly representing women workers, to the special arbitration tribunal which was constituted under the 1916 Munitions Act. The weekly wages of women munition workers range from a minimum of 22s. 6d. [\$5.47] up to £4 and £5 [\$19.47 and \$24.33] in a few exceptional cases. When it is remembered, however, that the purchasing power of the sovereign has fallen to 14s. 6d. [\$3.53] it will be seen how necessary advances in wages are, unless the cost of living can be speedily and greatly reduced. It is welcome news, therefore, to hear that, as in the case of men munition workers in the engineering trades, who have the right, upon application, to have their wages reviewed by the committee on production every four months, this arrangement is to be extended to women munition workers, and similar tribunals will be set up to consider periodically their applications.

¹ London correspondence of the Christian Science Monitor, Sept. 6, 1917.

FARM WORKERS' WAGES IN SCOTLAND.

The United States consul at Dundee, Scotland, reports¹ that at what is known as the Whitsunday hiring fairs which take place annually and at which farm workers apply for engagements, wages in the northeastern counties are said to have registered a general increase of from \$14 to \$25 per annum. In east Aberdeen, the consul states, the wages for a half year for what are known as first horse-men—that is, plowmen and others, those who can work with horses—were \$156 to \$166; second horse-men, \$136 to \$156; third, \$131 to \$146. For boys, wages ranged from \$97 to \$146; women, \$58 to \$68.

In east Perth, according to the report, there has been a slight rise, and in southeast Perth wages for single men have increased by about \$15, the half-yearly rate being from \$170 to \$185; in the southwestern district the weekly rates are \$8.50 for foremen and \$7.30 to \$7.80 for second men, with house and allowances. In The Lothians men are getting \$7.30 to \$8.50 a week, with \$4.85 for harvest, 8 hundredweight of potatoes, and 10 stones (140 pounds) of meal, while boys are paid \$8.85 to \$6.30, and women \$4.40, with some extras. In Berwick men's wages are \$7.30 to \$7.80, with perquisites, and women are getting \$4.40.

It is reported that in south Ayr many workers held off from engagements in order to get better terms later. Several cot men (handy men) were engaged at \$8.50 per week and single men at \$112 to \$127 per half year, with board, while in north Ayr cot men's wages advanced by \$0.75 to \$1.20 per week, and experienced women's wages \$5 to \$10 per half year. In Lanark the rise in married men's wages is stated at \$58 to \$68 per annum, while lads are getting \$30 to \$39 more for the half year. In Dumbarton the rates for married men are from \$8 to \$8.75 per week, with allowances.

The consul further reports that in Inverness and Ross wages show an advance, the rates in the former county being from \$243 to \$331 per annum, according to the men's qualifications, and in the latter from \$126 to \$156 per half year, with the usual allowances in both cases. In Sutherland there is a rise of \$24 per annum and in Caithness \$15 to \$24 for men and \$4.85 to \$14.60 for women, while in Orkney the current rates are \$78 to \$117 per half year for plowmen and \$49 to \$58 for lads, with food.

With the view to supplementing labor on the land a series of lessons is being given to Aberdeen schoolboys in the hoeing of potatoes and turnips and the work suited to them. Under the national-service movement a number of lads from 14 to 16 years of age have volunteered to work in gardens and on farms during their holidays.

¹ United States Commerce Reports, July 17, 1917, p. 201.

EMPLOYMENT AND WAGES OF WOMEN AND YOUNG PERSONS IN THE MINES OF GERMANY.¹

During the second quarter of 1914 there were 7,265 women employed in German mines, of whom 5,785 were in Upper Silesia. During the fourth quarter in 1916 there were 37,563 so employed. Of these 12,960 were in the mines of Upper Silesia, and 12,320 were employed in the Ruhr Basin where before the war men only were employed. The number of young persons employed in mines rose from 31,290 in the first period mentioned to 43,095 in the second. The percentage of women employed as compared with all employees was 0.94 in the second quarter of 1914 and 6.51 in the fourth quarter of 1916, while the percentage of young persons was 4.08 and 7.46 in the respective periods.

The following table shows the wages paid per shift to women and young persons in certain coal and salt mines of Germany during the second quarter of 1914 and the fourth quarter of 1916:

WAGES PAID PER SHIFT TO WOMEN IN COAL MINES AND SALT MINES, AND TO YOUNG PERSONS IN COAL MINES, IN GERMANY DURING THE SECOND QUARTER OF 1914 AND THE FOURTH QUARTER OF 1916.

Period.	Wages paid per shift to women in—			Wages paid per shift to young persons in—	
	Upper Silesia.	Ruhr basin.	Salt mines of Clausthal.	Upper Silesia.	Ruhr Basin.
Second quarter, 1914.....	<i>Cents.</i> 29.9	<i>Cents.</i> 1 57.9	<i>Cents.</i> 90.7	<i>Cents.</i> 29.9	<i>Cents.</i> 48.3
Fourth quarter, 1916.....	47.3	85.3	67.2	46.3	75.7

¹ Lignite mines of Halle.

It is reported that the increase in wages has not kept pace with the increased cost of living.

WAR-TIME WAGES AND THE COST OF LIVING IN NORWAY.

The Norwegian Statistical Office estimates that general wages in the Kingdom increased between 50 and 60 per cent from July, 1914, just before the outbreak of war, to April, 1917. During approximately the same period the Norwegian Labor Department estimates that the cost of food, fuel, and lighting for an ordinary family has increased 108 per cent.² If, however, there is included in the budget rents and other expenses of living, the net increase in the cost of living up to May, 1917, was estimated at 82 per cent. These esti-

¹ Data taken from Bulletin du Ministère du Travail et de la Prévoyance Sociale (Paris) for April-May, 1917, p. 196.

² Sociale Meddelelser utgit av Departementet for Sociale Saker. Christiania, 1917. No. 3-4.

mates rest upon the assumption that there has been no change during the period in the character and amount of the articles consumed by an average family whose income in 1913 ranged from 1,200 to 1,750 crowns a year (\$321 to \$469). The following table sets forth the estimated annual cost of living of a family in Norway with an average income of 1,500 crowns (\$402) in 1914 based on the prices of July, 1914, December, 1916, and March and May, 1917.

ANNUAL COST OF LIVING OF A FAMILY IN NORWAY HAVING AN AVERAGE INCOME OF 1,500 CROWNS (\$402) IN 1914, BASED ON THE PRICES OF JULY, 1914, DECEMBER, 1916, AND MARCH AND MAY, 1917.

[Source: Sociale Meddelelser utgit av Departementet for Sociale Saker, Christiania, 1917, p. 146.]

Items of expenditure.	Cost of a year's budget based on prices of—				Relative cost (July, 1914=100).		
	July, 1914.	December, 1916.	March, 1917.	May, 1917.	December, 1916.	March, 1917.	May, 1917.
Foods:							
Meat other than pork.....	\$27.42	\$58.95	\$61.69	\$61.41	215	225	224
Pork.....	6.43	13.30	13.95	14.33	207	217	223
Fish.....	12.24	24.36	24.60	25.21	199	201	206
Fats.....	68.74	111.36	116.17	120.29	162	169	175
Bread.....	32.36	50.81	54.37	64.72	157	168	200
Flour, cereals, vegetables.....	22.14	37.41	44.49	52.68	169	201	238
Coffee.....	9.98	11.88	12.38	13.88	119	124	139
Sugar.....	9.13	16.88	17.43	19.16	185	191	210
Other foods.....	7.98	13.72	14.60	15.72	172	183	197
Fuel and lighting:							
Fuel.....	12.65	35.17	35.54	58.44	278	281	462
Lighting.....	9.39	15.40	15.50	15.87	164	165	169
Clothing.....	51.83	89.06	94.83	98.68	172	183	190
Rents.....	64.12	69.24	69.55	69.75	108	109	109
Taxes.....	5.42	5.85	5.85	5.85	108	108	108
Other expenditures:							
Furniture, washing, liquors, tobacco, etc.....	42.94	73.86	78.58	84.59	172	183	197
Insurance, dues, etc.....	26.83	26.83	26.83	26.83	100	100	100
Total.....	409.60	654.08	686.36	747.41	160	168	182

In calculating the data for the table above it is assumed that the family has consumed the same amount of articles of food, fuel, etc., as was ascertained by an investigation for the country in 1912-13. In calculating increase of clothing prices use was made of an investigation in Christiania made in January in each of the years 1914, 1916, and 1917, with the assumption that no changes in prices had occurred between January, 1914, and July, 1914; and also that the average monthly increase from January, 1916, to May, 1917, had been the same as between January, 1916, and January, 1917. The rent increases in question apply likewise only to Christiania and are based upon municipal inquiries made each February. The index numbers in the last three columns of the table indicate clearly the price changes which took place.

But a question arises as to the probability of changes in consumption during the period of the war, and to ascertain this fact the statistical offices of the Kingdom made a special investigation in

August, 1916, and in February, 1917. The results are known only for the month of August, 1916, for a small group of families in Christiania.

The consumption of the following important articles had declined in the percentages noted: Meat, other than pork, 58 per cent; butter, 56 per cent; flour and other cereals, 62 per cent; cream, 65 per cent; cheese, 83 per cent; eggs, 92 per cent; and potatoes, 95 per cent.

On the other hand, the increased consumption of a generally lower grade of articles had been relatively greater to compensate for the decreased consumption of the higher-grade commodities: Pork, 143 per cent; fish products, 139 per cent; raw milk, 123 per cent (on account of reduced price); skim-milk, 143 per cent; oleomargarine, 124 per cent; and bread, 120 per cent.

But the report points out that if these percentage changes are applied to the average cost of the different items in the ordinary budget, the average family, by changing its consumption from a higher to a lower grade of articles, had been able to save only about 2 per cent on the cost of its food consumption.

As already stated, wages increased from the end of the year 1914 to the close of December, 1916, about 40 per cent, and from the beginning of the war to April, 1917, between 50 and 60 per cent. The following is a summary of recent changes in wages as collected by the Norwegian Statistical Office and shows the branch of industry affected and the per cent of increase in wages during the year 1916.

PER CENT OF INCREASE IN WAGES IN NORWAY DURING 1916, BY INDUSTRY GROUPS.

Industry group.	Per cent of increase during 1916.
Industry and construction work:	
Railroad construction work.....	25-30
Iron, steel, and allied industries.....	30
Building construction.....	30
Woodworking trade.....	24
Book printing (Christiania).....	20
Domestic service:	
Housemaids.....	30
Hotel service.....	60
Agriculture:	
Domestic service.....	30
Laborers.....	65
Others.....	33
Other trades: Stonemasons and carpenters.....	35

The report notes that statistics taken from the records of the Norwegian Employers' Federation agree with those of the Government statistical office in showing that general wages increased 50 to 60 per cent from the beginning of the war up to April, 1917. On the whole the tendency toward wage increase has been fairly general for the wage-earning class as a whole; but office employees, the report states, have not been equally benefited, so that the increased cost of living has fallen upon them with greater severity.

EMPLOYMENT AND UNEMPLOYMENT.

WORK OF FEDERAL, STATE, AND MUNICIPAL EMPLOYMENT OFFICES IN THE UNITED STATES AND OF PROVINCIAL EMPLOYMENT OFFICES IN CANADA.

Figures are given in the table below showing the operations of public employment offices for the month of August, 1917, and, in cases where figures are available, for August, 1916. For the United States the table includes data from Federal employment offices in 29 States and the District of Columbia, Federal-State employment offices in 2 States, a Federal-State-county-municipal office in 1 State, Federal-municipal employment offices in 1 State, State employment offices in 17 States, a State-county-municipal employment office in 1 State, State-municipal employment offices in 2 States, municipal employment offices in 6 States, and a municipal-private employment office in 1 State. Figures from 2 Canadian employment offices are included also.

OPERATIONS OF PUBLIC EMPLOYMENT OFFICES, AUGUST, 1916, AND AUGUST, 1917.

United States.

State, city, and kind of office.	Applica- tions from em- ployers.	Persons asked for by em- ployers.	Persons applying for work.		Persons referred to po- sitions.	Posi- tions filled.
			New reg- istrations.	Re- newals.		
Alabama:						
Mobile (Federal)—						
August, 1916.....	0	0	12	0	0	0
August, 1917.....	0	0	10	0	0	0
Arkansas:						
Little Rock (State)—						
August, 1917.....	102	333	82	25	410	333
California:						
Fresno (State)—						
August, 1917.....	379	1,245	669	33	765	646
Los Angeles (Federal)—						
August, 1916.....	1	1	149	(2)	1	1
August, 1917.....	1	10	593	(2)	10	10
Oakland (State)—						
August, 1916.....	943	1,297	635	369	1,220	803
August, 1917.....	1,472	2,620	967	652	1,930	1,390
Sacramento (State)—						
August, 1916.....	459	2,418	1,440	329	1,689	1,586
August, 1917.....	629	2,006	1,199	392	1,006	1,430
San Diego (Federal)—						
August, 1916.....	348	651	1,035	(2)	806	688
August, 1917.....	719	3,588	1,881	(2)	1,604	1,439
San Francisco (Federal)—						
August, 1916.....	425	817	1,330	(2)	807	321
August, 1917.....	507	2,060	1,261	(2)	2,247	1,837

¹Number applying for work.

²Not reported.

OPERATIONS OF PUBLIC EMPLOYMENT OFFICES, AUGUST, 1916, AND AUGUST, 1917—
Continued.

United States—Continued.

State, city, and kind of office.	Applica- tions from em- ployers.	Persons asked for by em- ployers.	Persons applying for work.		Persons referred to po- sitions.	Posi- tions filled.
			New reg- istrations.	Re- newals.		
California—Concluded.						
San Francisco (State)—						
August, 1916.....	1,571	3,718	2,418	728	2,849	2,173
August, 1917.....	3,140	6,259	3,630	1,980	5,790	4,610
Total:						
August, 1916.....					7,432	5,572
August, 1917.....					13,952	11,362
Colorado:						
Colorado Springs (State)—						
August, 1916.....	(1)	1,470	1,227	(1)	1,104	(1)
August, 1917.....	959	959	623	(1)	(1)	562
Denver (Federal)—						
August, 1916.....	2	2	2 20	(1)	10	2
August, 1917.....	246	246	2 156	(1)	156	0
Denver No. 1 (State)—						
August, 1916.....	(1)	446	409	(1)	371	(1)
August, 1917.....	987	987	689	(1)	(1)	587
Denver No. 2 (State)—						
August, 1916.....	(1)	722	584	(1)	453	(1)
August, 1917.....	725	725	466	(1)	(1)	395
Pueblo (State)—						
August, 1916.....	(1)	491	590	(1)	482	(1)
August, 1917.....	603	603	606	(1)	(1)	600
Total:						
August, 1916.....					2,420	(1)
August, 1917.....					(1)	2,144
Connecticut:						
Bridgeport (State)—						
August, 1916.....	(1)	938	2 1,166	(1)	(1)	845
August, 1917.....	(1)	789	2 938	(1)	(1)	717
Hartford (State)—						
August, 1916.....	(1)	778	2 818	(1)	(1)	485
August, 1917.....	(1)	1,096	2 1,464	(1)	(1)	838
New Haven (State)—						
August, 1916.....	(1)	852	2 1,033	(1)	(1)	664
August, 1917.....	(1)	905	2 1,018	(1)	(1)	759
Norwich (State)—						
August, 1916.....	(1)	148	2 174	(1)	(1)	144
August, 1917.....	(1)	256	2 293	(1)	(1)	241
Waterbury (State)—						
August, 1916.....	(1)	157	2 174	(1)	(1)	112
August, 1917.....	(1)	147	2 262	(1)	(1)	127
Total:						
August, 1916.....					(1)	2,250
August, 1917.....					(1)	2,682
Delaware:						
Wilmington (Federal)—						
August, 1916.....	19	338	2 52	(1)	48	40
August, 1917.....	36	50	2 183	(1)	192	166
District of Columbia:						
Washington (Federal)—						
August, 1917.....	147	2,354	2 737	(1)	611	518
Florida:						
Jacksonville (Federal)—						
August, 1916.....	(1)	(1)	2 511	(1)	198	198
August, 1917.....	1	5	2 407	(1)	0	0
Miami (Federal)—						
August, 1916.....	3	3	2 38	(1)	3	1
August, 1917.....	2	2	2 19	(1)	2	2
Total:						
August, 1916.....					201	199
August, 1917.....					2	2

¹ Not reported.

² Number applying for work.

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OPERATIONS OF PUBLIC EMPLOYMENT OFFICES, AUGUST, 1916, AND AUGUST, 1917—
Continued.

United States—Continued.

State, city, and kind of office.	Applica- tions from em- ployers.	Persons asked for by em- ployers.	Persons applying for work.		Persons referred to po- sitions.	Posi- tions filled.
			New reg- istrations.	Re- newals.		
Georgia:						
Savannah (Federal)—						
August, 1916.....	1	1	1 187	(²)	1	1
August, 1917.....	4	500	1 138	(²)	20	20
Idaho:						
Moscow (Federal)—						
August, 1916.....	(²)	(²)	1 4	(²)	4	4
August, 1917.....	30	30	1 22	(²)	22	22
Illinois:						
Chicago (Federal)—						
August, 1916.....	252	1,709	1 1,634	(²)	1,619	1,592
August, 1917.....	476	2,989	1 2,795	(²)	2,407	2,216
Chicago (State)—						
August, 1916.....	(²)	9,814	12,482	(²)	(²)	9,049
August, 1917.....	4,762	18,549	13,108	1,564	13,821	11,186
East St. Louis (State)—						
August, 1916.....	(²)	1,925	1,925	(²)	(²)	1,425
August, 1917.....	832	1,194	586	649	1,207	1,088
Peoria (State)—						
August, 1916.....	(²)	1,043	912	(²)	(²)	847
August, 1917.....	888	1,805	355	801	1,143	1,136
Rock Island-Moline (State)—						
August, 1916.....	(²)	1,335	737	(²)	(²)	627
August, 1917.....	672	1,521	690	366	952	857
Rockford (State)—						
August, 1916.....	(²)	1,502	1,294	(²)	(²)	1,031
August, 1917.....	737	1,368	724	212	816	748
Springfield (State)—						
August, 1916.....	(²)	670	684	(²)	(²)	602
August, 1917.....	502	784	395	392	666	558
Total:						
August, 1916.....					(²)	15,173
August, 1917.....					21,012	17,789
Indiana:						
Fort Wayne (State)—						
August, 1916.....	326	522	385	67	452	375
August, 1917.....	269	649	152	363	533	515
Indianapolis (Federal)—						
August, 1916.....	68	721	1 654	(²)	490	417
August, 1917.....	162	951	1 1,433	(²)	751	657
Indianapolis (State)—						
August, 1916.....	708	584	791	(²)	207	584
August, 1917.....	1,827	1,844	1,633	139	1,827	1,772
South Bend (State)—						
August, 1916.....	223	922	452	32	401	357
August, 1917.....	126	560	390	35	425	375
Terre Haute (State)—						
August, 1917.....	177	360	247	61	308	304
Total:						
August, 1916.....					³ 1,550	³ 1,733
August, 1917.....					3,844	3,623
Iowa:						
Des Moines (State)—						
August, 1916.....	31	436	120	18	103	70
August, 1917.....	65	390	200	25	211	169
Kansas:						
Topeka (State)—						
August, 1916.....	21	57	68	(²)	51	36
August, 1917.....	180	200	60	(²)	48	43
Kentucky:						
Louisville (State)—						
August, 1916.....	590	590	1 768	(²)	590	590
August, 1917.....	196	166	1 210	(²)	166	166

¹ Number applying for work.² Not reported.³ Exclusive of Terre Haute office, not reported.

OPERATIONS OF PUBLIC EMPLOYMENT OFFICES, AUGUST, 1916, AND AUGUST, 1917—Con.

United States—Continued.

State, city, and kind of office.	Applica- tions from em- ployers.	Persons asked for by em- ployers.	Persons applying for work.		Persons referred to posi- tions.	Posi- tions filled.
			New reg- istrations.	Re- newals.		
Kentucky—Concluded.						
Louisville (municipal-private)—						
August, 1916.....	389	389	350	590	280	145
August, 1917.....	184	444	163	312	375	169
Total:						
August, 1916.....					870	735
August, 1917.....					541	335
Louisiana:						
New Orleans (Federal-State)—						
August, 1916.....	30	42	¹ 390	(²)	50	33
August, 1917.....	64	295	¹ 360	(²)	421	208
Maine:						
Portland (Federal)—						
August, 1917.....	5	175	64	(²)	62	62
Maryland:						
Baltimore (Federal)—						
August, 1916.....	53	217	¹ 161	(²)	145	145
August, 1917.....	36	121	¹ 319	(²)	677	506
Massachusetts:						
Boston (Federal)—						
August, 1916.....	3	1,640	¹ 54	(²)	12	12
August, 1917.....	45	1,794	¹ 1,721	(²)	1,326	643
Boston (State)—						
August, 1916.....	2,280	2,561	³ 1,356	(²)	⁴ 3,617	1,645
August, 1917.....	2,154	2,510	³ 1,494	(²)	⁴ 3,480	1,620
Springfield (State)—						
August, 1916.....	1,185	1,788	³ 949	(²)	⁴ 2,137	1,224
August, 1917.....	1,046	1,605	³ 796	(²)	⁴ 1,911	1,179
Worcester (State)—						
August, 1916.....	1,077	1,337	³ 596	(²)	⁴ 1,385	731
August, 1917.....	994	1,191	³ 532	(²)	⁴ 1,327	717
Total:						
August, 1916.....					7,151	3,612
August, 1917.....					8,044	4,159
Michigan:						
Battle Creek (State)—						
August, 1916.....	73	277	199	(²)	171	171
August, 1917.....	224	402	402	(²)	402	402
Bay City (State)—						
August, 1916.....	52	184	133	(²)	98	98
August, 1917.....	48	179	126	(²)	100	97
Detroit (Federal)—						
August, 1916.....	241	1,256	¹ 1,066	(²)	1,066	1,062
August, 1917.....	63	300	¹ 423	(²)	186	186
Detroit (State)—						
August, 1916.....	1,609	5,246	(²)	(²)	(²)	4,315
August, 1917.....	741	5,887	5,887	(²)	5,887	5,864
Flint (State)—						
August, 1916.....	108	1,182	961	(²)	961	961
August, 1917.....	615	1,769	929	(²)	923	884
Grand Rapids (State)—						
August, 1916.....	462	890	871	(²)	855	855
August, 1917.....	786	1,026	954	(²)	986	941
Jackson (State)—						
August, 1916.....	426	868	816	(²)	796	796
August, 1917.....	663	590	486	(²)	571	576
Kalamazoo (State)—						
August, 1916.....	179	509	479	(²)	479	479
August, 1917.....	452	699	746	(²)	728	503
Lansing (State)—						
August, 1916.....	74	239	259	(²)	228	228
August, 1917.....	108	365	426	(²)	411	411
Muskegon (State)—						
August, 1916.....	69	342	253	(²)	242	234
August, 1917.....	51	272	226	(²)	275	270
Saginaw (State)—						
August, 1916.....	168	1,047	942	(²)	942	942
August, 1917.....	127	734	470	(²)	479	479

¹ Number applying for work.
² Not reported.

³ Number who were registered.
⁴ Number of offers of positions.

OPERATIONS OF PUBLIC EMPLOYMENT OFFICES, AUGUST, 1916, AND AUGUST, 1917—
Continued.

United States—Continued.

State, city, and kind of office.	Applica- tions from em- ployers.	Persons asked for by em- ployers.	Persons applying for work.		Persons referred to po- sitions.	Posi- tions filled.
			New reg- istrations.	Re- newals.		
Michigan—Concluded.						
Sault Ste. Marie (Federal)—						
August, 1916.....	9	120	1 88	(2)	89	89
August, 1917.....	7	98	1 59	(2)	44	44
Total:						
August, 1916.....					3 5,927	10,230
August, 1917.....					10,992	10,657
Minnesota:						
Duluth (State)—						
August, 1916.....	(2)	(2)	(2)	(2)	(2)	1,498
August, 1917.....	(2)	(2)	(2)	(2)	(2)	1,333
Minneapolis (Federal)—						
August, 1916.....	55	70	1 260	(1)	49	49
August, 1917.....	4	6	1 162	(1)	1	1
St. Paul (State)—						
August, 1916.....	(2)	(2)	(2)	(2)	(2)	1,609
August, 1917.....	(2)	(2)	(2)	(2)	(2)	1,187
Total:						
August, 1916.....					(2)	3,156
August, 1917.....					(2)	2,521
Mississippi:						
Gulfport (Federal)—						
August, 1916.....	1	1	1 60	(2)	6	0
August, 1917.....	0	0	1 38	(2)	0	0
Missouri:						
Kansas City (Federal-State)—						
August, 1916.....	558	1,142	1 1,012	(2)	1,032	833
August, 1917.....	1,141	2,657	1 2,071	(2)	1,970	1,824
St. Joseph (State)—						
August, 1917.....	(2)	1,170	1 940	(2)	940	930
St. Louis (Federal-State)—						
August, 1916.....	215	550	1 392	(2)	320	302
August, 1917.....	282	4,568	1 2,830	(2)	2,159	2,152
Total:						
August, 1916.....					1,352	1,135
August, 1917.....					5,069	4,906
Montana:						
Butte (municipal)—						
August, 1916.....	500	500	650	(2)	490	460
August, 1917.....	(2)	403	1 419	(2)	(2)	359
Helena (Federal)—						
August, 1916.....	8	18	1 18	(2)	8	6
August, 1917.....	5	5	1 7	(2)	9	4
Total:						
August, 1916.....					498	466
August, 1917.....					(2)	363
Nebraska:						
Omaha (Federal-State-county-municipal)—						
August, 1917.....	968	6,484	875	422	1,163	923
Nevada:						
Reno (Federal)—						
August, 1917.....	107	670	1 599	(2)	477	453
New York:						
Albany (State)—						
August, 1916.....	533	764	487	171	696	407
August, 1917.....	640	945	565	273	955	598
Buffalo (Federal)—						
August, 1916.....	115	815	1 839	(2)	787	634
August, 1917.....	1,214	1,816	1 1,445	(2)	2,181	1,619

¹ Number applying for work.² Not reported.³ Exclusive of Detroit office, not reported.

OPERATIONS OF PUBLIC EMPLOYMENT OFFICES, AUGUST, 1916, AND AUGUST, 1917—
Continued.

United States—Continued.

State, city, and kind of office.	Applica- tions from em- ployers.	Persons asked for by em- ployers.	Persons applying for work.		Persons referred to po- sitions.	Posi- tions filled.
			New reg- istrations.	Re- newals.		
New York—Concluded.						
Buffalo (State)—						
August, 1916.....	960	1,757	1,120	67	1,659	1,222
August, 1917.....	1,324	1,860	1,305	119	2,227	1,591
New York City (Federal)—						
August, 1916.....	231	1,303	¹ 1,692	(²)	579	550
August, 1917.....	3,495	6,892	¹ 9,661	(²)	5,378	3,626
New York City (State)—						
August, 1916.....	1,311	1,890	1,116	548	2,110	1,230
August, 1917.....	1,746	2,738	1,275	759	2,728	1,736
New York City (municipal)—						
August, 1916.....	2,188	2,476	2,491	(²)	3,729	1,985
August, 1917.....	2,202	2,864	2,328	1,835	3,506	2,257
Rochester (State)—						
August, 1916.....	1,113	1,602	794	317	1,556	873
August, 1917.....	1,532	2,305	1,224	566	2,159	1,390
Syracuse (State)—						
August, 1916.....	783	905	514	119	834	647
August, 1917.....	1,204	1,842	880	194	1,564	1,208
Total:						
August, 1916.....					11,950	7,548
August, 1917.....					20,698	14,025
North Dakota:						
Bismarck (Federal)—						
August, 1917.....	155	490	¹ 220	(¹)	220	121
Ohio:						
Akron (State-municipal)—						
August, 1916.....	(¹)	1,764	756	1,298	1,623	1,405
August, 1917.....	(²)	3,403	1,435	1,853	2,439	2,065
Athens (State-municipal)—						
August, 1917.....	(²)	119	102	40	86	68
Canton (State-municipal)—						
August, 1917.....	(²)	687	680	196	509	308
Chillicothe (State-municipal)—						
August, 1917.....	(²)	12,311	12,558	5	11,993	11,970
Cincinnati (State-municipal)—						
August, 1916.....	(¹)	1,672	1,424	2,882	1,665	989
August, 1917.....	(²)	2,516	4,782	3,167	2,289	1,639
Cleveland (Federal)—						
August, 1916.....	10	15	¹ 101	(²)	96	13
August, 1917.....	34	829	¹ 102	(²)	71	21
Cleveland (State-municipal)—						
August, 1916.....	(¹)	8,321	2,769	7,296	7,181	5,858
August, 1917.....	(²)	8,516	3,992	8,031	7,238	6,217
Columbus (State-municipal)—						
August, 1916.....	(¹)	2,565	813	2,238	2,320	1,919
August, 1917.....	(²)	3,598	1,185	2,874	3,214	2,519
Dayton (State-municipal)—						
August, 1916.....	(¹)	1,288	771	1,120	1,041	946
August, 1917.....	(²)	1,876	1,625	1,605	1,541	1,285
Hamilton (State-municipal)—						
August, 1917.....	(²)	165	242	42	92	74
Lima (State-municipal)—						
August, 1917.....	(²)	509	647	108	374	323
Mansfield (State-municipal)—						
August, 1917.....	(²)	139	235	85	174	124
Marietta (State-municipal)—						
August, 1917.....	(²)	319	243	101	222	174
Marion (State-municipal)—						
August, 1917.....	(²)	350	422	152	322	206
Portsmouth (State-municipal)—						
August, 1917.....	(²)	399	913	60	322	217
Sandusky (State-municipal)—						
August, 1917.....	(²)	255	56	12	56	32
Springfield (State-municipal)—						
August, 1917.....	(¹)	270	507	281	275	148
Staubenville (State-municipal)—						
August, 1917.....	(¹)	678	489	377	648	530

¹ Number applying for work.

² Not reported.

OPERATION OF PUBLIC EMPLOYMENT OFFICES, AUGUST, 1916, AND AUGUST, 1917—
Continued.

United States—Continued.

State, city, and kind of office.	Applica- tions from em- ployers.	Persons asked for by em- ployers.	Persons applying for work.		Persons referred to po- sitions.	Posi- tions filled.
			New reg- istrations.	Re- newals.		
Ohio—Concluded.						
Tiffin (State-municipal)—						
August, 1917.....	(1)	248	300	149	218	158
Toledo (State-municipal)—						
August, 1916.....	(1)	4,484	1,401	2,162	2,676	2,267
August, 1917.....	(1)	4,298	2,156	3,160	3,775	3,168
Washington, C. H. (State-municipal)—						
August, 1917.....	(1)	360	277	131	336	308
Youngstown (State-municipal)—						
August, 1916.....	(1)	1,507	761	1,145	1,360	1,127
August, 1917.....	(1)	2,081	1,374	1,379	2,030	1,730
Zanesville (State-municipal)—						
August, 1917.....	(1)	174	354	128	191	120
Central office—						
August, 1917.....	(1)	36	1,728	5	29	18
Total:						
August, 1916.....					2 17,962	2 14,524
August, 1917.....					38,444	33,442
Oklahoma:						
Enid (State)—						
August, 1916.....	113	(1)	153	(1)	(1)	100
August, 1917.....	154	240	3 225	(1)	209	192
Muskogee (State)—						
August, 1916.....	213	(1)	215	(1)	(1)	191
August, 1917.....	355	584	3 386	(1)	370	311
Oklahoma City (State)—						
August, 1916.....	526	(1)	454	(1)	(1)	443
August, 1917.....	301	1,089	808	(1)	807	738
Tulsa (State)—						
August, 1916.....	701	(1)	693	(1)	(1)	693
August, 1917.....	788	1,826	1,364	(1)	1,234	1,179
Total:						
August, 1916.....					(1)	1,427
August, 1917.....					2,620	2,420
Oregon:						
Astoria (Federal)—						
August, 1916.....	25	170	3 171	(1)	140	104
August, 1917.....	3	19	3 10	(1)	6	6
Portland (Federal)—						
August, 1916.....	1,439	3,269	3 2,627	(1)	2,378	2,262
August, 1917.....	2,118	7,530	3 6,184	(1)	5,804	5,629
Portland (municipal)—						
August, 1917.....	1,640	7,517	(1)	(1)	(1)	6,027
Total:						
August, 1916.....					5 2,518	5 2,366
August, 1917.....					5 5,810	11,662
Pennsylvania:						
Altoona (State)—						
August, 1916.....	(1)	537	54	(1)	24	24
August, 1917.....	4	153	38	107	75	63
Harrisburg (State)—						
August, 1916.....	(1)	795	230	112	207	188
August, 1917.....	257	578	269	138	360	326
Johnstown (State)—						
August, 1916.....	(1)	185	74	16	67	54
August, 1917.....	70	272	100	18	97	77
Philadelphia (Federal)—						
August, 1916.....	77	1,328	3 257	(1)	246	209
August, 1917.....	132	853	3 1,259	(1)	1,058	532
Philadelphia (State)—						
August, 1916.....	(1)	797	650	481	820	713
August, 1917.....	484	2,390	2,162	488	2,002	1,845
Pittsburgh (Federal)—						
August, 1916.....	24	425	3 809	(1)	491	463
August, 1917.....	45	1,655	3 213	(1)	315	189

¹ Not reported.² Exclusive of 16 offices not in operation in 1916.³ Number applying for work.⁴ Includes figures for Bourse branch.⁵ Exclusive of Portland municipal office, not reported.

OPERATIONS OF PUBLIC EMPLOYMENT OFFICES, AUGUST, 1916, AND AUGUST, 1917—
Continued.

United States—Continued.

State, city, and kind of office.	Applica- tions from em- ployers.	Persons asked for by em- ployers.	Persons applying for work.		Persons referred to po- sitions.	Posi- tions filled.
			New reg- istrations.	Re- newals.		
Pennsylvania—Concluded.						
Pittsburgh (State)—						
August, 1916.....	(1)	1,373	738	180	585	529
August, 1917.....	260	1,028	446	158	513	482
Total:						
August, 1916.....					2,440	2,180
August, 1917.....					4,420	3,514
Rhode Island:						
Providence (Federal)—						
August, 1917.....	38	482	1 522	(2)	359	267
Providence (State)—						
August, 1916.....	269	324	136	248	(2)	324
August, 1917.....	226	382	324	139	(2)	382
Total:					(2)	(2)
August, 1916.....					(2)	(2)
August, 1917.....					(2)	649
South Carolina:						
Charleston (Federal)—						
August, 1916.....	2	11	1 12	(2)	83	83
August, 1917.....	0	0	1 337	(2)	337	9
Tennessee:						
Memphis (Federal)—						
August, 1916.....	4	6	1 49	(2)	0	0
August, 1917.....	2	2,508	1 1,015	(2)	1,004	720
Texas:						
Dallas (municipal)—						
August, 1916.....	213	490	3 366	11	500	471
August, 1917.....	250	980	1 302	12	520	425
Fort Worth (Federal)—						
August, 1917.....	2	34	1 70	(2)	34	34
Fort Worth (municipal)—						
August, 1916.....	187	616	475	27	381	333
August, 1917.....	134	576	5 959	8	539	511
Galveston (Federal)—						
August, 1916.....	6	8	1 40	(2)	8	4
August, 1917.....	4	515	1 31	(2)	12	12
Houston (Federal)—						
August, 1916.....	3	6	1 14	(2)	3	3
August, 1917.....	0	0	1 14	(2)	0	0
Total:						
August, 1916.....					892	841
August, 1917.....					1,105	982
Virginia:						
Norfolk (Federal)—						
August, 1916.....	13	50	1 222	(2)	75	60
August, 1917.....	(2)	(2)	(2)	(2)	(2)	(2)
Richmond (municipal)—						
August, 1916.....	218	355	1 526	(1)	367	202
August, 1917.....	268	329	429	(1)	423	173
Total:						
August, 1916.....					442	262
August, 1917.....					423	173
Washington:						
Bellingham (Federal-municipal)—						
August, 1916.....	176	245	1 302	(2)	298	289
August, 1917.....	153	366	1 329	(2)	284	254
Colfax (Federal)—						
August, 1917.....	187	550	1 600	(2)	513	503
Everett (Federal)—						
August, 1916.....	59	785	1 10	(2)	8	6
August, 1917.....	6	375	1 525	(2)	357	347
Everett (municipal)—						
August, 1916.....	(2)	705	(1)	(2)	(2)	508
August, 1917.....	(2)	(2)	(1)	(2)	(2)	366

¹ Number applying for work.

² Not reported.

³ Includes 300 transients.

⁴ Includes 230 transients.

⁵ Includes 380 unwritten applications.

OPERATIONS OF PUBLIC EMPLOYMENT OFFICES, AUGUST, 1916, AND AUGUST, 1917—
Continued.

United States:—Concluded.

State, city, and kind of office.	Applica- tions from em- ployers.	Persons asked for by em- ployers.	Persons applying for work.		Persons referred to po- sitions.	Posi- tions filled.
			New reg- istrations.	Re- newals.		
Washington—Concluded.						
North Yakima (Federal)—						
August, 1916.....	850	1,838	1 1,766	(2)	1,575	1,451
August, 1917.....	629	1,695	1 1,842	(2)	1,195	1,146
Seattle (Federal)—						
August, 1916.....	135	880	1 957	(2)	402	354
August, 1917.....	146	945	1 4,266	(2)	846	827
Seattle (municipal)—						
August, 1917.....	4,164	7,114	(2)	(2)	6,965	6,299
Spokane (municipal)—						
August, 1916.....	2,760	4,231	(2)	(2)	3,710	3,609
August, 1917.....	1,960	2,460	(2)	(2)	2,375	2,279
Sumner (Federal)—						
August, 1917.....	13	75	- 1 55	(2)	52	52
Tacoma (Federal-municipal)—						
August, 1916.....	442	1,150	1 1,325	(2)	1,028	1,018
August, 1917.....	954	2,850	(2)	(2)	1,654	911
Walla Walla (Federal)—						
August, 1916.....	213	400	1 316	(2)	0	0
August, 1917.....	515	575	1 480	(2)	365	320
Total:						
August, 1916.....					(2)	(2)
August, 1917.....					3 14,606	13,304
Wisconsin:						
La Crosse (State-municipal)—						
August, 1916.....	154	253	1 231	(2)	179	114
August, 1917.....	243	141	1 166	(2)	127	68
Madison (Federal)—						
August, 1917.....	1,086	4,543	1 4,286	(2)	4,197	3,257
Milwaukee (State-county-municipal)—						
August, 1916.....	2,030	3,594	1 3,018	(2)	3,253	2,598
August, 1917.....	5,136	2,007	1 4,588	(2)	4,602	3,261
Oshkosh (State-municipal)—						
August, 1916.....	145	204	1 163	(2)	125	88
August, 1917.....	418	133	1 159	(2)	116	81
Superior (State-municipal)—						
August, 1916.....	494	1,125	1 1,080	(2)	1,094	668
August, 1917.....	1,535	518	1 1,179	(2)	1,202	1,039
Total:						
August, 1916.....					4 4,651	4 3,468
August, 1917.....					10,244	7,706
Canada.						
Quebec:						
Montreal (provincial)—						
August, 1916.....	931	(2) 770	418	(2)	590	506
August, 1917.....	308		1 391	(2)	561	470
Quebec (provincial)—						
August, 1916.....	(2)	96	1 152	(2)	(2)	104
August, 1917.....	66	363	293	(2)	203	154
Total:						
August, 1916.....					(2)	610
August, 1917.....					764	624

1 Number applying for work.

2 Not reported.

3 Exclusive of Everett municipal office, not reported.

4 Exclusive of Madison Federal office, not reported.

EMPLOYMENT IN SELECTED INDUSTRIES IN AUGUST, 1917.

Data concerning volume of employment in the month of August, 1917, were received by the bureau from representative manufacturing establishments in 13 industries. The table following, compiled from

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these reports, shows that in August, 1917, as compared with August, 1916, there was a decrease in the number of people employed in seven of the industries and an increase in six. Leather manufacturing had the greatest decline in this respect—5.6 per cent—while the men's ready-made clothing industry had the greatest increase—12.3 per cent.

There was an increase in the amount of money paid to employees in each of the 13 industries in August, 1917, as compared with the corresponding month in 1916. The most marked increase was that of 37.8 per cent in the iron and steel industry. An increase of 32.7 per cent appeared in woolen manufacturing.

Three establishments engaged in boot and shoe manufacturing were closed during August, and several plants in different industries reported that they were not working full time or not running full capacity. The 1917 figures in cigar manufacturing are slightly smaller on account of labor troubles in one establishment.

COMPARISON OF EMPLOYMENT IN IDENTICAL ESTABLISHMENTS IN AUGUST, 1916, AND AUGUST, 1917.

Industry.	Estab-lishments to which in-quiries were sent.	Estab-lishments report-ing for Au-gust, both years.	Period of pay roll.	Number on pay roll in August—		Per cent of in-crease (+) or de-crease (-).	Amount of pay roll in August—		Per cent of in-crease (+) or de-crease (-).
				1916	1917		1916	1917	
Boots and shoes	85	68	1 week..	57,904	55,062	- 4.9	\$738,829	\$806,981	+ 9.2
Cotton manufacturing...	88	52	...do....	40,945	40,542	- 1.0	390,047	470,225	+20.6
Cotton finishing.....	19	13	...do....	9,803	10,165	+ 3.7	121,139	148,483	+22.6
Hosiery and underwear..	82	56	...do....	28,805	29,448	+ 2.2	266,752	322,532	+20.9
Woolen.....	56	43	...do....	37,743	39,754	+ 5.3	440,834	585,162	+32.7
Silk.....	65	34	2 weeks..	10,215	9,727	- 4.8	228,179	229,207	+ .5
Men's ready-made cloth-ing.	86	37	1 week..	13,522	15,187	+12.3	187,462	223,267	+19.1
Iron and steel.....	143	109	½ month.	186,601	206,604	+10.7	6,897,489	9,503,260	+37.8
Car building and repair-ing.	78	21	...do....	25,942	25,447	- 1.9	800,659	933,968	+16.6
Cigar manufacturing.....	103	61	1 week..	19,332	18,720	- 3.2	208,176	230,520	+10.7
Automobile manufactur-ing.	66	42	...do....	104,001	107,024	+ 2.9	2,028,049	2,305,983	+13.7
Leather manufacturing..	46	32	...do....	14,532	13,713	- 5.6	204,331	226,016	+10.6
Paper making.....	80	50	...do....	24,881	23,671	- 4.9	339,891	385,172	+13.3

The next table shows the number of people actually working on the last full day of the reported pay period in August of this year, as compared with August, 1916. Each industry is represented, but the number of establishments reporting is small in most of them, due largely to the fact that this is not an item of record in many plants. The small number should be taken into consideration when using these figures.

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COMPARISON OF EMPLOYMENT IN IDENTICAL ESTABLISHMENTS ON LAST FULL DAY'S OPERATION IN AUGUST, 1916, AND AUGUST, 1917.

Industry.	Establishments reporting for August both years.	Period of pay roll.	Number actually working on last full day of reported pay period in August—		Per cent of increase (+) or decrease (-).
			1916	1917	
Boots and shoes.....	21	1 week....	10,389	9,807	- 5.6
Cotton manufacturing.....	28	do.....	19,224	18,996	- 1.2
Cotton finishing.....	7	do.....	3,156	3,018	- 4.4
Hosiery and underwear.....	10	do.....	8,295	8,688	+ 4.7
Woolen.....	33	do.....	29,593	32,263	+ 9.0
Silk.....	18	2 weeks....	5,163	4,815	- 6.7
Men's ready-made clothing.....	3	1 week....	931	1,100	+18.2
Iron and steel.....	86	½ month....	137,777	151,841	+10.2
Car building and repairing.....	19	do.....	20,378	19,389	- 4.9
Cigar manufacturing.....	17	1 week....	3,516	3,715	+ 5.7
Automobile manufacturing.....	18	do.....	59,421	62,460	+ 4.9
Leather manufacturing.....	14	do.....	8,905	8,561	- 3.9
Paper making.....	13	do.....	7,765	7,492	- 3.5

In comparing the figures for August, 1917, with those from identical establishments in July, 1917, it is found that in August there was a decrease in the number of people on the pay roll in 11 of the 13 industries. The greatest decrease was 7.7 per cent, in cigar manufacturing, due in part to the labor troubles in one establishment mentioned above, where only a few people were working in August. Iron and steel and automobile manufacturing showed an increase in the number of persons on the pay roll.

There was a decrease in the amount of the pay roll in 10 of the industries for August of this year as compared with July. A decrease of 8.4 per cent, appearing in cigar manufacturing, was the greatest. There was an increase of 11.1 per cent in the iron and steel industry.

COMPARISON OF EMPLOYMENT IN IDENTICAL ESTABLISHMENTS IN JULY, 1917, AND AUGUST, 1917.

Industry.	Establishments to which inquiries were sent.	Establishments reporting for July and August.	Period of pay roll.	Number on pay roll in—		Percent of increase (+) or decrease (-).	Amount of pay roll in—		Percent of increase (+) or decrease (-).
				July, 1917.	August, 1917.		July, 1917.	August, 1917.	
Boots and shoes.....	85	66	1 week..	56,470	53,383	-5.5	\$775,317	\$774,930	(1)
Cotton manufacturing.....	88	53	do.....	43,232	42,404	-1.9	502,029	479,366	- 4.5
Cotton finishing.....	19	16	do.....	12,601	12,523	- .6	187,196	185,240	- 1.0
Hosiery and underwear.....	82	52	do.....	27,457	26,854	-2.2	307,444	297,852	- 3.1
Woolen.....	56	47	do.....	41,419	40,534	-2.1	615,012	598,054	- 2.8
Silk.....	65	34	2 weeks..	9,559	9,333	-2.4	214,883	214,650	- .1
Men's ready-made clothing.....	86	37	1 week..	15,650	15,071	-3.7	237,707	221,880	- 6.7
Iron and steel.....	143	107	½ month....	201,242	207,771	+3.2	8,617,789	9,574,833	+11.1
Car building and repairing.....	78	20	do.....	17,124	17,006	- .7	556,993	606,429	+ 8.9
Cigar manufacturing.....	103	66	1 week..	21,098	19,472	-7.7	262,402	240,386	- 8.4
Automobile manufacturing.....	66	37	do.....	103,537	105,462	+1.9	2,350,013	2,270,083	- 3.4
Leather manufacturing.....	46	33	do.....	14,431	14,280	-1.0	217,742	226,016	+ 3.8
Paper making.....	80	43	do.....	23,961	22,246	-7.2	363,119	360,247	- .8

¹ Decrease of less than one-tenth of 1 per cent.

The number of establishments giving information concerning the number of people actually working on the last full day of the reported pay period in July and August of this year is small in most of the industries, and this should be noted when considering the figures of the next table.

COMPARISON OF EMPLOYMENT IN IDENTICAL ESTABLISHMENTS ON LAST FULL DAY'S OPERATION IN JULY, 1917, AND AUGUST, 1917.

Industry.	Establishments reporting for July and August.	Period of pay roll.	Number actually working on last full day of reported pay period in—		Per cent of increase (+) or decrease (-).
			July, 1917.	August, 1917.	
Boots and shoes.....	21	1 week.....	10,174	9,716	- 4.5
Cotton manufacturing.....	35	...do.....	27,081	26,454	- 2.3
Cotton finishing.....	11	...do.....	7,802	7,678	- 1.6
Hosiery and underwear.....	15	...do.....	10,954	10,684	- 2.5
Woolen.....	38	...do.....	33,528	33,178	- 1.0
Silk.....	20	2 weeks....	5,711	5,477	- 4.1
Men's ready-made clothing.....	6	1 week....	1,358	1,403	+ 3.3
Iron and steel.....	82	½ month....	145,947	142,700	- 2.2
Car building and repairing.....	20	...do.....	15,632	15,080	- 3.5
Cigar manufacturing.....	20	1 week....	4,530	4,456	- 1.6
Automobile manufacturing.....	19	...do.....	53,492	55,314	+ 3.4
Leather manufacturing.....	13	...do.....	7,586	7,364	- 2.9
Paper making.....	11	...do.....	7,324	6,590	-10.0

CHANGES IN WAGE RATES.

Between July 15 and August 15, 1917, wage-rate changes were reported by establishments in 9 of the 13 industries from which the bureau receives reports. The aggregate number of establishments reporting such changes during this period was not as large as in several months preceding. No increase or decrease in wage rates was reported in boot and shoe manufacturing, men's ready-made clothing, cotton finishing, and woolen manufacturing.

The iron and steel industry showed the largest number of increases in wage rates. There was an 8.2 per cent increase affecting one-third of the force and a 5 per cent increase affecting two-thirds of the force in one establishment, while another plant gave a 7.7 per cent increase to one-third of the employees and a 5 per cent increase to the remaining two-thirds of the force. One establishment reported a 15 per cent increase to hot-mill employees and a 10 per cent increase to all other labor. In one instance an increase of 11.09 per cent was granted to 38.6 per cent of the force, and in another there was a 10.17 per cent increase given to 36.5 per cent of the force. A 9.54 per cent increase to 19.4 per cent of the employees was reported by one establishment. Another plant granted a 12.13 per cent increase to 59.1 per cent of the force. In one case 14.6 per cent of the force received a 6.74 per cent increase, while in another 15.3 per cent of the employees were granted an 8.45 per cent increase. All employees in one

plant received a 7 per cent increase. Two other establishments in this industry reported increases, both giving a 10.9 per cent increase to 48.5 per cent and 37.5 per cent of the employees, respectively.

In paper making one plant gave a 9 per cent increase to 4 per cent of the force, and another granted a 12.5 per cent increase to all employees.

There were increases reported by two establishments engaged in cotton manufacturing. The entire force in one of them received a 10 per cent increase. The second granted a 5 per cent increase, but failed to state the proportion of the force affected.

Three establishments in car building and repairing granted a 10 per cent increase to pieceworkers and 5 cents per hour to time workers.

In automobile manufacturing there was a 10 per cent increase given to 27 per cent of the force in one plant. Another establishment in this industry reported a decrease of \$0.0151 per hour in the productive average hourly rate.

Of the four remaining industries, one establishment in each reported increases. In cigar manufacturing one plant gave a 14½ per cent increase to the office force. The entire force in one hosiery and underwear plant was granted a 10 per cent increase. One leather manufacturing plant gave a 17 per cent increase to all employees. A 5 per cent increase was granted to the entire force in one silk mill.

INDEX NUMBERS OF EMPLOYMENT AND PAY ROLL, JANUARY, 1915, TO AUGUST, 1917.

Index numbers showing relatively the variation in the number of persons employed and in pay-roll totals in seven industries by months from January, 1915, to August, 1917, have been compiled and are presented in the following table. These index numbers are based on the figures for "Employment in selected industries," appearing in this and preceding REVIEWS. The seven industries shown are the only ones for which the Bureau of Labor Statistics has comparable data as far back as January, 1915. January, 1915, is taken as the starting point, and the number of persons whose names appeared on the pay roll for that month represents 100. The amount of money carried on the pay rolls is treated in the same manner. To illustrate, if the number of persons employed in the iron and steel industry in January, 1915, is taken as 100, then the number employed in that industry in August, 1917, was 180; in other words, had increased 80 per cent; and, if the money pay roll in January, 1915, be taken as 100, the pay roll in August, 1917, represented 296, or in other words, nearly three times as much.

At the bottom of the table is given the per cent of increase in per capita earnings in August, 1917, as compared with January, 1915. This may be determined for any month by dividing the index for the amount of the pay roll by the index for the number of persons on the pay roll.

INDEX NUMBERS OF EMPLOYMENT AND PAY ROLL, JANUARY, 1915, TO AUGUST, 1917.

[January, 1915=100.]

Month and year.	Boots and shoes.		Cotton manufacturing.		Cotton finishing.		Woolen manufacturing.		Hosiery and underwear.		Silk.		Iron and steel.	
	Number on pay roll.	Amt. of pay roll.	Number on pay roll.	Amt. of pay roll.	Number on pay roll.	Amt. of pay roll.	Number on pay roll.	Amt. of pay roll.	Number on pay roll.	Amt. of pay roll.	Number on pay roll.	Amt. of pay roll.	Number on pay roll.	Amt. of pay roll.
1915.														
January.....	100	100	100	100	100	100	100	100	100	100	100	100	100	100
February.....	99	96	100	104	111	112	101	99	105	106	102	108	96	106
March.....	95	88	101	107	108	110	104	104	105	111	102	110	104	116
April.....	89	76	101	105	110	113	107	108	108	112	99	102	108	122
May.....	91	82	102	106	110	115	107	107	110	118	99	105	111	120
June.....	92	89	101	101	102	107	102	97	112	122	98	102	115	132
July.....	93	91	101	101	109	105	105	98	110	118	97	103	117	121
August.....	94	95	100	102	106	109	103	96	108	118	100	104	121	135
September.....	94	95	99	103	106	107	113	111	113	117	101	104	125	140
October.....	103	111	100	96	111	114	113	102	114	129	103	113	130	147
November.....	107	120	101	101	122	116	117	117	116	132	106	121	131	159
December.....	125	129	101	100	115	124	117	121	119	138	108	121	130	164
1916.														
January.....	114	125	99	102	118	124	114	124	115	132	109	120	135	162
February.....	115	123	100	110	119	129	117	133	116	138	107	126	138	184
March.....	115	125	100	111	121	132	117	134	118	142	109	131	141	186
April.....	113	120	100	113	115	127	119	136	120	142	110	130	141	186
May.....	111	123	100	118	112	136	120	145	121	146	109	130	146	204
June.....	113	127	100	117	113	137	117	139	120	144	110	133	147	207
July.....	114	125	100	114	113	133	116	136	119	135	110	120	149	181
August.....	113	123	98	114	114	132	111	129	117	134	109	124	152	203
September.....	112	122	98	116	113	134	115	138	119	142	109	125	155	211
October.....	112	123	98	111	113	136	117	134	121	147	109	131	155	219
November.....	117	141	99	117	116	141	117	144	123	156	107	129	158	224
December.....	122	156	101	125	119	156	119	158	124	164	109	135	160	234
1917.														
January.....	123	157	100	123	117	152	122	163	123	160	109	134	164	246
February.....	123	159	100	125	116	151	122	161	124	158	108	137	165	242
March.....	122	156	100	127	116	154	123	162	125	164	107	142	168	257
April.....	119	145	99	124	113	150	120	154	122	154	106	138	167	241
May.....	118	152	99	129	115	163	120	173	121	166	104	141	172	286
June.....	120	165	99	137	116	166	119	172	123	169	102	136	173	286
July.....	117	153	99	137	111	153	119	173	121	166	102	128	175	267
August.....	110	153	97	131	111	152	116	168	119	161	100	128	180	296
Per cent of increase in per capita earnings in August, 1917, over January, 1915....		39		35		37		45		35		28		64

REPORT OF EMPLOYMENT EXCHANGES IN THE UNITED KINGDOM (GREAT BRITAIN AND IRELAND) FOR FIVE WEEKS ENDING JULY 13, 1917.

According to the British Labor Gazette of August, 1917, the number of workpeople on the registers of the 382 British employment exchanges at some time or other during the five weeks ending July 13, 1917, was 434,832, exclusive of workmen in occupations of a

more or less casual nature as dock laborers, etc. The figures comprise workers in professional, commercial, and clerical as well as industrial occupations. The operations of the five weeks are summarized as follows:

Item.	Men.	Women.	Boys.	Girls.	Total.
On registers June 8, 1917.....	44,186	67,516	6,924	9,343	127,969
Number of individuals registered during period.....	93,951	162,950	24,060	25,902	306,863
Total.....	138,137	230,466	30,984	35,245	434,832
On registers July 13, 1917.....	32,364	64,152	6,802	9,269	112,587
Vacancies notified during period (applications for help).....	80,060	77,401	14,281	12,779	184,521
Vacancies filled during period.....	56,245	65,777	11,543	10,543	144,108
Applicants placed in other districts.....	13,346	14,908	1,710	1,530	31,494

The average daily number of registrations and of vacancies filled for the five weeks ending July 13, 1917, are shown in the following table, together with comparative figures for a month previous and a year previous:

Department.	Average registrations per day in period ending—			Average vacancies filled per day in period ending—		
	July 13, 1917.	June 8, 1917.	July 14, 1916.	July 13, 1917.	June 8, 1917.	July 14, 1916.
Men.....	3,310	3,508	3,852	1,875	1,964	2,085
Women.....	5,575	5,488	6,382	2,193	2,040	2,284
Boys.....	824	806	831	385	371	406
Girls.....	880	847	894	351	337	362
Total.....	10,589	10,649	11,959	4,804	4,712	5,137

VOLUME OF EMPLOYMENT IN THE UNITED KINGDOM (GREAT BRITAIN AND IRELAND) IN JULY, 1917.

The following figures as to the condition of employment in Great Britain and Ireland in July, 1917, as compared with June, 1917, and July, 1916, have been compiled from figures appearing in the British Labor Gazette of August, 1917. The most important changes appear in the tinsplate, steel, and galvanized sheet trades, which show an increase of 9 per cent of the mills in operation as compared with the preceding month and a decrease of 35 per cent of mills in operation as compared with July, 1916. The textile trades show a decrease in the number of employees on account of the scarcity of labor, while the change of earnings is due to advances in rates of wages and war bonuses. Shortage of labor was reported in the following trades: Pig iron industry; iron and steel works; cotton trade; woolen and worsted trades; jute trade; linen trade; silk trade; carpet trade; lace trade; bleaching, printing, dyeing, and finishing trades; tailoring trades; shirt and collar trade; other clothing trades; brick and cement trades; bookbinding trades; paper trades; glass trades; and

food preparation trades. Short time was reported in certain cases, but the following trades reported overtime: Engineering trades, shipbuilding trades, leather trades, sawmilling and machining trades, cement trade, printing and bookbinding trades, paper trades, pottery trades, and food preparation trades.

VOLUME OF EMPLOYMENT IN THE UNITED KINGDOM (GREAT BRITAIN AND IRELAND) IN JULY, 1917, AS COMPARED WITH JUNE, 1917, AND JULY, 1916.

[Compiled from figures in the Labor Gazette (London), August, 1917.]

Industries and basis of comparison.	Per cent of increase (+) or decrease (-) in July, 1917, as compared with—		Industries and basis of comparison.	Per cent of increase (+) or decrease (-) in July, 1917, as compared with—	
	June, 1917.	July, 1916.		June, 1917.	July, 1916.
Coal mining: Average number of days worked.....	-6.0	-9.2	Shirt and collar trade:		
Iron mining: Average number of days worked.....	+1.4	-.9	Number of employees.....	-1.5	-9.8
Quarrying: Number of employees.	+0	-15.8	Earnings of employees.....	-.0	+3.1
Pig iron: Number of furnaces in blast.....	-1.3	+6.2	Other clothing trades:		
Iron and steel works:			Dressmaking and millinery—		
Number of employees.....	-1.6	+5.9	Number of employees.....	+1.0	-12.1
Number of shifts worked.....	-1.8	+4.9	Wholesale mantle, costume, blouse, etc.....	-3.0	-5.6
Engineering trades: Number of employees ¹	+0.04	-.16	Number of employees—		
Shipbuilding trades: Number of employees ¹	-.12	-.22	London.....	-.7	-6.7
Tinplate, steel and galvanized sheet trades: Number of mills in operation.....	+9.0	-35.0	Manchester.....	-.7	-6.7
Cotton trade:			Number of employees—		
Number of employees.....	-.4	-8.0	Glasgow.....	-3.9	-9.8
Earnings of employees.....	+3.5	+1.2	Corset trade—Number of employees.....	-.6	-16.0
Woolen trade:			Building and construction of works: Number of employees.....	-.02	+0.06
Number of employees.....	-6	-4.2	Sawmilling and machining:		
Earnings of employees.....	+9	+8.1	Number of employees ¹	(?)	-.1
Worsted trade:			Brick trade:		
Number of employees.....	-.7	-2.8	Number of employees.....	-.2	-1.4
Earnings of employees.....	+1	+12.4	Earnings of employees.....	-.4	+11.5
Hosiery trade:			Cement trade:		
Number of employees.....	-.3	-5.8	Number of employees.....	-1.0	-10.4
Earnings of employees.....	+2.5	+9.1	Earnings of employees.....	+1.8	+1.8
Jute trade:			Printing, bookbinding, and paper trades:		
Number of employees.....	+6	+2	Printing trades:		
Earnings of employees.....	+2.0	+20.9	Number of employees reported by trade-unions ¹	-.1	+1.0
Linen trade:			Number of employees reported by employers.....	-.5	-10.1
Number of employees.....	-.1	+7	Earnings of employees reported by employers.....	-.4	+2.3
Earnings of employees.....	+1.2	+25.6	Bookbinding trades:		
Silk trade:			Number of employees reported by trade-unions ¹	(?)	+2
Number of employees.....	-.3	-2.8	Number of employees reported by employers.....	-.1	-11.3
Earnings of employees.....	+5	+12.1	Earnings of employees reported by employers.....	+9	+4.7
Carpet trade:			Paper trades: Number of employees.....	+3	-4.5
Number of employees.....	-1.4	-7.2	Pottery trades:		
Earnings of employees.....	+4.5	+12.0	Number of employees.....	-.1	-1.9
Lace trade:			Earnings of employees.....	+8	+16.3
Number of employees.....	-.2	-9.5	Glass trades:		
Earnings of employees.....	+2.1	-2.3	Number of employees.....	-.5	-.8
Bleaching, printing, dyeing and finishing:			Earnings of employees.....	+8	+8.1
Number of employees.....	-.5	-4.0	Food preparation trades:		
Earnings of employees.....	+2.1	+19.4	Number of employees.....	+2.1	-12.5
Boot and shoe trade:			Earnings of employees.....	+6.5	+8.6
Number of employees.....	-.9	-5.1	Doek and riverside labor: Number of employees.....	-1.7	-13.9
Earnings of employees.....	-.3	+10.2	Seamen: Number of employees.....	+5.6	-10.7
Leather trades: Number of employees.....	-.3	+1.2			
Tailoring trades:					
Number of employees.....	-.1	-2.9			
Earnings of employees.....	+1.9	+17.8			

¹ Based on unemployment returns.

² No change.

UNEMPLOYMENT IN THE NETHERLANDS.¹

A Dutch trades-union periodical publishes the following statistics of unemployment in the unions on the 1st of June, 1917, in comparison with preceding months back to September, 1914:

UNEMPLOYMENT AMONG TRADE-UNION MEMBERS, SEPT. 1, 1914, TO JUNE 1, 1917.

Date.	Total number trade-unionists reported.	Number unemployed.	Number partly unemployed.
Sept. 1, 1914.....	87,678	19,387	11,843
Jan. 1, 1915.....	86,899	15,961	6,794
Apr. 1, 1915.....	88,794	11,874	4,852
July 1, 1915.....	91,791	10,538	2,781
Oct. 1, 1915.....	94,182	9,891	2,419
Jan. 1, 1916.....	99,320	8,857	1,196
Apr. 1, 1916.....	106,349	5,802	550
July 1, 1916.....	114,908	5,439	475
Oct. 1, 1916.....	121,658	5,917	413
Jan. 1, 1917.....	129,809	8,042	2,096
Mar. 1, 1917.....	136,093	11,607	4,229
Apr. 1, 1917.....	138,154	10,089	4,920
May 1, 1917.....	139,417	10,005	4,236
June 1, 1917.....	141,139	9,289	3,554

The large proportion of the unemployed in September, 1914, indicates the panicky condition which the outbreak of the war caused in industrial circles.

The figures indicate a much better situation in July, 1916, than in June, 1917. The relatively greater unemployment this year is due to the practical suspension of ocean traffic, to the closing or reduced working time of factories because of lack of fuel, and in a less degree to other results of the war.

No trade had more than 10 per cent of complete unemployment on June 1, 1917, excepting diamond workers, 38.3 per cent; glass and earthenware workers, 16.9; harbor laborers, 47.8; and seamen, 28.7. The percentage of diamond workers unemployed, though very large, was substantially the same as in June, 1916, and was due in both years to the extinction of the trade in diamonds with the European belligerent countries.

¹ From report of United States consul at Amsterdam to State Department, Aug. 2, 1917.

LABOR ORGANIZATIONS.

STATISTICS OF LABOR ORGANIZATION IN CANADA.

The Sixth Annual Report on Labor Organization in Canada for the calendar year 1916,¹ recently issued by the Canadian Department of Labor, presents, aside from statistical data on trade-unions, statements giving the extent to which trade-unionists have enlisted, the action taken by various labor bodies looking to restricting members from becoming militiamen, the attitude of organized labor toward the scheme for registering the man power of the Dominion, and the declarations of organized labor on the war. While in 1914 and 1915, owing largely to enlistments, the number of local branches of trade-unions decreased by 134 and the total membership decreased from 175,799 at the close of 1913 to 143,343 at the close of 1915, a recovery of 17,064 members is noted in 1916, the membership at the end of that year being 160,407, although there was an additional loss of 41 local branches.

The year saw much activity among the officials of labor organizations in an effort to arrest the decline in trade-union membership in Canada, and while no advance is shown in the building and kindred trades, progress in the better-organized districts was recorded by the metal, clothing, and railroad trades. Percentages of the trade groups have undergone considerable change during the past two years. The building trades, which in 1914 had 18.9 per cent of the total trade-union membership, had been in 1916 reduced to 9.4 per cent, while the railroad employees, with 24.9 per cent in 1914, had increased to 30.5 per cent in 1916.

Of the 160,407 members, 129,123 are said to be in international organizations (91 of which have branches in Canada, 84 of these being connected with the American Federation of Labor), 22,884 in noninternational organizations (their activities being confined to the Dominion), and 8,400 in independent bodies. Of the international organizations the brotherhood of railroad trainmen heads the list with a reported membership of 10,684.

It is stated that 1,284 local branch unions reported 21,599 enlistments since the declaration of war; also that 593 British reservists have joined their regiments. The building trades lost most heavily,

¹ Canada. Department of Labor. Sixth annual report on labor organization in Canada (for the calendar year 1916). Ottawa, 1917. 230 pp.

contributing 19.5 per cent of the enlistments; railroad employees came next with 16.4 per cent.

The report states that the most representative labor body in the Dominion is the Trades and Labor Congress of Canada, which is closely identified with the international labor movement, and that 48 of the 84 international organizations operating in Canada and affiliated with the American Federation of Labor have also affiliated their Canadian membership, numbering 58,755, with the Trades and Labor Congress.

Included in the report is a statement of trade-union beneficiary work. The following table shows the beneficiary disbursements made during 1916 by 80 of the 91 international organizations operating in Canada (the other 11 not having beneficiary features) and also the disbursements made by the local branch unions to their own members. It is explained that in the case of the international organizations the expenditures are for the whole membership, since it was not possible to secure from the officers a statement of what proportion of benefits were distributed among the Canadian membership.

BENEFITS PAID BY INTERNATIONAL ORGANIZATIONS OPERATING IN CANADA, AND BY LOCAL BRANCH UNIONS, IN 1916.¹

Kind of benefit.	International organizations.	Local branch unions. ²	
		1916	Increase over 1915.
Death.....	\$7, 808, 225	\$56, 646	\$37, 002
Unemployment.....	³ 106, 458	2, 121	⁴ 28, 314
Strike.....	2, 811, 426	15, 542	13, 718
Sickness.....	⁵ 1, 120, 186	146, 592	93, 289
Old-age pensions.....	461, 780	.....	.....
Other benefits.....	194, 053	27, 279	3, 814
Total.....	12, 502, 128	248, 180	176, 137

¹ The disbursements were mostly for the year 1916; some of the reports, however, are for the fiscal year of the respective organizations.

² Includes international, noninternational, and independent local branches.

³ Includes also traveling benefits.

⁴ Decrease.

⁵ Includes also accidents.

As already suggested, the report notes the opposition of some labor organizations to military service, but states that of 143 international organizations operating in North America a very limited number have passed restrictive laws; the names of these are given in the report. As to the attitude of labor toward the registration of the man power of the Dominion, it would appear "from the various resolutions adopted and opinions expressed by the chain of trades and labor councils throughout the Dominion * * * that the attitude of organized labor on the question of registration is far from one of unanimity."

One chapter of the report, entitled "Organized labor and the war," sets forth the pronouncement of the Trades and Labor Congress

of Canada in which was reaffirmed the declaration of 1915 "that it is the duty of the labor world to render every assistance possible to the allies of Great Britain, more especially for those in Canada who form a part of the Empire, in an endeavor to secure early and final victory for the cause of freedom and democracy." Both the trades and labor congress and the Canadian Federation of Labor expressed themselves as opposed to conscription for military service. The report includes the text of proposal of the American Federation of Labor that wage earners be represented in the peace conferences, and notes that the British Trades-union Congress rejected this suggestion while the Trades and Labor Congress of Canada approved it.

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WORKMEN'S COMPENSATION.

CONVENTION OF INDUSTRIAL ACCIDENT COMMISSIONS.

The International Association of Industrial Accident Boards and Commissions held its fourth annual meeting at Boston, Mass., during the week of August 21 to 25. Representation at the conference embraced 15 States, 4 Provinces of Canada, the United States Employees' Compensation Commission, and the United States Bureau of Labor Statistics.¹

The program of the convention was so arranged as to promote a discussion of the four principles of workmen's compensation, namely: (1) Prevention of industrial accidents and diseases; (2) restoration and rehabilitation of the injured worker; (3) reeducation of the worker and his adaptation to changed industrial conditions; and (4) the payment, or rather the administration, of compensation benefits. It also included an additional section on the defects and needed changes in compensation legislation. The two most important changes advocated at the conference were the inclusion of occupational diseases within the scope of compensable injuries, and legislation eliminating the conflict of jurisdiction between the States and the Federal Government over injuries sustained in interstate commerce.

The committee on statistics and compensation insurance cost submitted a report to the association in which it strongly recommended the adoption of an accident severity rate as the proper method of measuring industrial hazards, and presented a schedule of severity ratings computed on the basis of time lost.²

The resolutions adopted by the association included two of more than ordinary importance. One provided for the appointment of a committee "for the purpose of formulating and promoting legislation for eliminating conflicts in jurisdiction between Federal and State authorities in cases involving industrial injuries occurring in transportation by railroad or water, or in the loading and unloading of cargoes, or kindred occupations"; and the other provided that the association "emphatically indorses every wise effort to rehabilitate those injured in industry and also those injured in military service."

¹ For a discussion of some of the more important problems discussed at the convention, see pp. 111 to 121 of this issue.

² See pp. 123 to 143 for complete report of the committee.

The association voted to hold its next convention at Madison, Wis., and elected the following officers for the ensuing year: President, F. M. Wilcox, member, Wisconsin Industrial Commission; vice president, George A. Kingston, commissioner, Ontario Workmen's Compensation Board; secretary-treasurer, Royal Meeker, United States Commissioner of Labor Statistics. The proceedings of the Boston conference will be published in a future bulletin of the United States Bureau of Labor Statistics.

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THREE IMPORTANT PROBLEMS OF WORKMEN'S COMPENSATION.

BY CARL HOOKSTADT.

In past years workmen's compensation commissioners have not always been fully alive to the possibilities and real significance of compensation legislation. The old employer's liability theory of indemnity was to a considerable extent retained by compensation officials, many of whom considered that the doling out of compensation benefits to injured employees constituted the principal or even the sole function of the commission. Recently, however, there is being manifested by these commissioners a broader viewpoint as to their duties, and this new point of view was noticeably present in the discussions of the International Association of Industrial Accident Boards and Commissions at their fourth annual meeting, held at Boston, Mass., August 21-25, 1917.¹ The papers read at the conference covered most of the more important subjects connected with the administration of workmen's compensation laws. There were, however, three problems which, because of the new theories advanced and the intense interest excited, are of special importance. These problems include (1) accident prevention, (2) the rehabilitation and reeducation of injured workers, and (3) "free choice" in the selection of physicians. The following discussion of these subjects is based primarily upon the papers and arguments presented at the conference.

1. ACCIDENT PREVENTION.

Our workmen's compensation laws have been enacted in the vague belief that industrial accidents were inevitable and constituted a permanent and integral part of our industrial life. For a number of years prior to the enactment of the first compensation laws in 1911, a considerable amount of safety legislation had been on the statute books of many of the more advanced industrial States, but the effectiveness of these laws as regards accident prevention was unsatisfactory. The methods of prevention were practically limited to the mechanical guarding of danger points, and as there appeared to be no diminution in the number of accidents it came to be felt that perhaps accidents, like the poor, were always to be with us. However, the enactment of workmen's compensation legislation, in which the financial burden placed upon the employer was in direct proportion to his accident rate, gave a fresh impetus to accident prevention work. Better and more comprehensive safety laws were passed. Casualty insurance companies entered upon a new era of

¹ For a brief account of the convention proceedings, see pp. 108, 109.

active accident prevention, which was shared by many of the larger manufacturing establishments throughout the country. Out of these conditions grew the safety education movement. Establishments which had instituted effective safety organizations and carried on safety educational work among their employees soon discovered a marked reduction in their accident frequency rate. So great was this enthusiasm and faith in organization and educational methods that mechanical safeguarding was subordinated.

Recently, however, new light has been thrown upon this important problem.¹ Critical analysis of accident statistics has brought out two significant facts. In the first place, it was discovered that the severity of accidents resulting from mechanical causes was much greater than the severity of accidents due to the human factor, i. e., the thoughtlessness and negligence of the worker. In other words, in a large majority of cases, mechanical accidents result fatally or in long-time disabilities, while the nonmechanical accidents are of a minor nature. Accident statistics which had been given out by several State compensation commissions showed with remarkable uniformity that about 25 per cent of the accidents were due to mechanical causes, and from this it was argued that the mechanical or engineering factor in causing accidents was of less importance than the human element, and therefore stress should be laid upon educational work. This accounted in part for the rapid development of the safety organization and educational movement. An examination of these statistics, however, showed that though the mechanical accidents constituted only 25 per cent of the total they accounted for approximately 50 per cent of the time lost. In the presentation of their accident data the question of the severity or seriousness of the accidents had been left out of consideration. In fact, the adoption of an accident severity rate as the proper measure of industrial hazard has been advocated only recently.²

The second important fact pointed out was that the marked reduction in accident frequency mentioned above consisted principally of accidents occasioned by nonmechanical causes, or, in other words, short-time injuries. These facts are of tremendous significance in pointing out lines of attack which manufacturers and safety engineers must necessarily adopt if the results in accident prevention are to be commensurate with the money and energy expended. If it be true that there is a more or less distinct line of demarcation between fatal and serious accidents on the one hand and minor accidents on the other,

¹ Mechanical Safeguards, by David S. Beyer, safety manager, Liberty Mutual Insurance Co.; and Some Showings of Accident Records, by L. W. Chaney, special agent, United States Bureau of Labor Statistics.

² See MONTHLY REVIEW, July, 1916, pp. 6 to 17.

not as to results, but as to fundamental causes, and if it be true that the former are due chiefly to mechanical causes while the latter result from the workers' ignorance or carelessness, it can readily be seen that accident-prevention work presents a twofold problem. The non-mechanical accidents, resulting principally in short-time disabilities, can best be prevented through safety organization and educational methods, while for the elimination of the fatal and serious accidents engineering revision is necessary. This is the conclusion reached by the United States Bureau of Labor Statistics in a study of accidents and accident prevention in the iron and steel industry.¹ This study showed (1) that a large majority of the serious accidents were occasioned by mechanical causes, (2) that the frequency rate of this class of accidents was little affected by safety organization and educational methods, and (3) that these accidents have been materially reduced through engineering revision. By "engineering revision," however, is meant much more than "mechanical safeguarding." The term is intended to suggest the widest application of engineering skill to industrial plants. The design and location of the buildings, the arrangement of the transportation facilities, the means of access to every point where a worker must go, the introduction of adequate lighting, the removal of hazardous conditions, the guarding or replacement of dangerous machines—all these must have adequate attention.

2. REHABILITATION AND REEDUCATION OF INJURED WORKMEN.

Whatever other effects the world war may have, it has at least awakened a deep interest in the work of rehabilitating and reeducating injured men, whether injured in industry or upon the battle field. This interest was particularly manifested at the conference.² Several speakers emphasized the importance of restoring injured men functionally and industrially, and the necessity of organizing the work of rehabilitation so as to improve and continue the efforts now being made on behalf of military cripples and to apply the same methods to industrial cripples. It makes no difference to the cripple whether his hand was cut off by a saw or shot off by a shell. He needs

¹ For a summary of this report see article, Can serious industrial accidents be eliminated? in MONTHLY REVIEW for August, 1917, by L. W. Chaney and H. S. Hanna.

² The following papers dealing with some phase of rehabilitation were read at the conference: Restoring the Disabled to Industry, by T. Norman Dean, statistician, Workmen's Compensation Board of Ontario; Medical Competence and Hospital Efficiency, by F. D. Donoghue, M. D., medical adviser, Massachusetts Industrial Accident Board; Late Construction Work and the Hospitals, by F. J. Cotton, M. D.; Comparison of Industrial with Military Casualties, by I. M. Rubinow, director, Bureau of Social Statistics, New York City.

the same surgical treatment and vocational training for industry in either case.

The functional and professional reeducation of industrial cripples and their readaptation to vocational pursuits has, after six years of workmen's compensation experience, hardly been thought of, much less provided for, by our State legislatures or the administrative authorities responsible for the enforcement of the compensation laws. This rehabilitation and adaptation requires, successively, necessary medical and surgical attention to relieve physical disability as far as possible, proper fitting and instruction in the use of artificial appliances to overcome bodily disadvantage, reeducation to hasten and encourage social and economic rehabilitation, compensation during the period of treatment and reeducation, and Government aid to insure employment consonant with disability. Although adequate medical treatment is absolutely essential to complete rehabilitation, only three State compensation laws¹ require the employer to furnish unlimited medical services. Several laws make no provision for medical treatment whatever, and in others the low maximum limits make adequate treatment impossible.

This failure to provide adequate medical service indicates not merely the opposition of the employers but reflects the inability of society to comprehend the great importance and social value of the speedy restoration of the earning capacity of injured workers. The benefits provided for in compensation laws, instead of being regarded as a means of effecting rehabilitation, have been considered as an end in itself. The old idea of indemnity for negligence on the part of the employer toward his injured employees has been all too prevalent. Here and there men with broader vision have pointed out that the objective of compensation legislation should be nothing less than the rehabilitation of injured workers as completely and quickly as possible, and that the payment of compensation and medical benefits was simply a means of accomplishing this result. Compensation commissioners, however, have generally been satisfied with the performance of their duties if the benefits provided in the acts have been paid in accordance with the statutory requirements.

Furthermore, the hospitals have made no adequate provision for handling industrial accident cases, nor does the average hospital organization permit effective reconstruction work. This work of rehabilitation, as pointed out by Dr. Cotton, not only requires careful and daring surgery but demands unremitting after care with special supporting apparatus, arrangements for massage, exercises and electrical treatment, and construction and education in the use of artificial appliances, all of which must be done or supervised

¹ Connecticut (1915), California (1917), and Idaho (1917).

by specially trained and specially competent surgeons. However, very little effective work along these lines has been done. Hospitals have never desired this sort of work particularly nor have they been properly organized to handle it effectively. Then, too, there has been a sad lack of cooperation between the hospital and the employer or his representative, the insurance company. The latter all too frequently regards medical expenses as pure losses. Even if all insurance companies were broad-minded enough to accept the principle of reconstruction the very number of such separate units would make effective cooperation difficult.

Nothing has been attempted systematically in this country to secure suitable reemployment for permanently disabled workmen, many of whom, because of their injuries, are unable to continue their former occupations and must therefore seek new kinds of work. Usually it has been the practice to let these unfortunates shift for themselves as best they can. These wrecks thus set adrift speedily gravitate to the almshouses, or, in exceptional cases, employers take them on as flagmen, watchmen, and the like, and sometimes exhibit them with no little pride and self-gratulation as evidence of the generous treatment accorded their men. In some cases compensation commissions have held that injured workmen were entitled to compensation benefits until suitable employment had been provided for them. This has led some insurance companies to engage in employment work in haphazard fashion, but the results have been entirely inadequate and unsatisfactory. The greatest drawback has been the lack of definite and centralized responsibility to carry out and supervise this important work of economic rehabilitation.

The spirit manifested at the conference, however, indicated that the commissions are at last beginning to realize the value and necessity of economic rehabilitation. This interest is, no doubt, accelerated by the fact of America's entrance into the war with its probable harvest of disabled soldiers. The results which have been accomplished by some of the belligerents in reconstructing their war cripples is almost beyond belief. In fact, permanent total disability has been practically eliminated. Probably no country is doing more efficient work in restoring military cripples than Canada.

The Canadian system, as pointed out by Mr. Dean,¹ is threefold. First, the Dominion, through its military hospitals commission, provides convalescent homes, medical treatment, and vocational reeducation for disabled returned soldiers; and later, through its board of pension commissioners, furnishes gratuities, allowances and assistances to the disabled Canadian soldiers and their dependents. Sec-

¹ Paper on Restoring the Injured to Industry, read at the Boston conference by T. Norman Dean, statistician, Ontario Workmen's Compensation Board.

ond, the provincial commissions in each Province provide employment. And third voluntary organizations, such as welcoming committees, philanthropic societies, employment bureaus, and similar agencies supplement the employment work of the provincial authorities. In addition to these, various Dominion and provincial departments aid in land-settlement schemes.

The medical and surgical treatment including functional reeducation is the best and most effectual that science can afford. It has been the policy to assemble all the amputation cases in orthopedic hospitals where functional and professional reeducation is carried on. Thus the individual case—the patient's power of adaptability and his attitude to economic rehabilitation—can be studied. All limbs are made at those hospitals, and thus the advantages of the latest improvements are obtained, some of which are not available from individual firms. No expense is spared in obtaining the most suitable attachments, the prior or possible occupation of the injured man himself, the development of the functional use of the stump, and a consideration of the adaptability of the patient always being borne in mind. The success of restoring the function of a disabled member is vastly increased when the man learns and acts on the knowledge that the remaining stump can be made more useful by training.

Functional rehabilitation is followed by professional reeducation. The injured man chooses his own occupation, being advised by vocational officers who act upon the reports received during functional reeducation. The work is commenced during convalescence, but continued beyond if necessary. The general training comes first, and includes instruction in English for non-English-speaking persons, language, penmanship, and arithmetic. The vocational retraining covers many fields, embracing commercial and agricultural as well as industrial pursuits. Every effort has been made to secure experts in the various lines as instructors. In some cases apprenticeship contracts are secured in industrial establishments. This training is not merely given as training but as a means to obtain livelihood and as such the demand is carefully watched and the supply regulated accordingly. Special methods are employed for the reeducation of the totally blind and totally deaf, converting these from the category of totally disabled to self-supporting.

The work of reemployment is carried on under provincial commissions appointed by the local governments, being supplemented by the efforts of municipal, voluntary, and philanthropic organizations. The end in view is to get the soldier into industry, finding him a position which he is capable of filling, so that he can meet the competition of men who have not been disabled. By keeping careful record of the man, by visiting him, and by encouraging

him, much is being done. Job after job, suited to his crippled body and wounded mind, must be tried out until at last his restlessness and discontent are overcome and he settles down as an independent, self-reliant worker.

The land-settlement schemes of the various Governments comprise free land, free farming instruction, free supervision, and substantial assistance in the form of stock, lumber, implements, and cash.

The Canadian experience, as well as that of European countries, indicates the possibilities of economic rehabilitation of our disabled men—industrial as well as military. It is to be hoped that the responsible authorities, particularly the State workmen's compensation commissions, will grasp the opportunity and emulate the example set by foreign countries.

3. "FREE CHOICE" IN SELECTION OF PHYSICIANS.

Probably no one phase of workman's compensation has created more administrative difficulties or caused more ill feeling than the question of free choice of physicians. The subject is particularly important, because it directly affects the employee, the physician, and the employer. The employee is interested in his own speedy recovery and in having a physician in whom he has confidence; the employer is interested in reducing his compensation and medical costs; and the physician is interested both financially and professionally. The interplay of these various and sometimes conflicting interests constantly causes friction and creates innumerable difficulties.

Most of the compensation laws provide that the employer shall furnish reasonable medical and hospital services to injured employees, usually for specified periods, and in some cases limited as to maximum amounts. Most of these laws, however, make no specific provisions as to the selection of physicians, but the courts and commissions generally hold that the obligation of the employer to "furnish" or "provide" medical service carries with it the privilege of choosing the physician. This practice has been based on two theories. First, that the employer is more competent to judge the efficiency of the doctor employed and to provide efficient medical and hospital treatment; and, second, that it is to the interest of the employer to furnish the very best medical and surgical treatment, so as to minimize the result of the injury and to secure as early a recovery as possible. As a matter of practice, however, the employee in some of the States is allowed to choose his own physician, but the extent of this practice depends upon the policy of the employers and insurance carriers.

Recently, however, there has developed a widespread movement for free choice of physicians, which has found expression in the enactment of amendments to the compensation laws in several States during the present year, specifically granting the injured employee the right to choose his own physician. This movement, backed by practically the entire medical profession and a large majority of the wage earners, is undoubtedly a reaction against the practices developed under the system of allowing the selection of physicians to be made by the employer. Since each system has certain advantages and disadvantages, a discussion of the two systems may be advisable.

Selection by employer.

Inasmuch as the burden of paying the medical costs rests upon the employer, it seems reasonable that he should have a voice in the selection of the physician. He is naturally interested in reducing his compensation costs. This reduction depends to some extent upon the speedy restoration of the injured employee's earning capacity, which in turn is dependent largely upon the adequacy of the medical and surgical treatment furnished. Competent medical treatment, however, is not always possible if the selection of the physician is beyond the control of the employer, who is, as a rule, more competent to judge the efficiency of the physician than the injured employee. The foreign, non-English speaking, and not infrequently illiterate workman naturally chooses a physician of his own nationality, who is often incompetent and sometimes disreputable. These physicians not only attempt to mulct the employers by prolonging treatment, making unnecessary calls, padding their bills, and overcharging generally, but because of their incompetency are an actual menace to the patient himself. Numerous cases are on record in which injuries which should have had the attention of highly skilled surgeons were treated by physicians without surgical practice and wholly incompetent. Such treatment is always costly to the employer and frequently harmful to the injured workman.

Because of these conditions many employers and insurance carriers have insisted upon their legal right to select the physicians, and the tendency to exercise this right seems to be on the increase. Most of the large manufacturing establishments, and even some of the insurance companies, have established hospitals in connection with their plants. It is maintained that more efficient medical service can thus be rendered at much less cost. Furthermore, it allows closer medical supervision. A common complaint made by employers is that workmen will not report minor injuries, many of which become septic and develop into serious cases. The prompt attention given to injuries and the close personal supervision made possible

through an establishment hospital minimizes the danger of blood poisoning and results in earlier recoveries.

Selection by employee.

On the other hand, it may well be asked, Why this widespread reaction against the present system of selection by employers if it is as beneficial as maintained by its advocates? Three reasons are generally advanced in favor of free choice of physicians by employees.

In the first place, the free and unhampered choice of one's own physician has generally been considered as one of the inalienable rights of mankind. The relationship existing between a patient and his physician is private and personal. Furthermore, the therapeutic value of confidence and faith in one's physician is well recognized by the medical profession, and this confidence naturally is assured when the injured workman selects his own physician. Moreover, the injured man has most at stake. It is he, and not the employer or physician, who suffers; it is his life which hangs in the balance. A man desires a doctor whom he knows, with whom he can freely and unreservedly discuss his ailment, and in whom he has confidence.

Another factor which has influenced the movement for free choice has been the dissatisfaction with the kind of medical service frequently furnished by employers and insurance carriers. While it is true that many employers maintain excellent hospitals with highly skilled surgeons and trained nurses in charge and provide medical treatment even in excess of statutory requirements, yet this is by no means the general practice. The kind of service furnished by many employers is entirely inadequate. There has been a tendency to employ contract doctors many of whom have not been especially competent. Furthermore, physicians employed on a contract basis frequently have more cases than they can take care of adequately and in addition are not inclined to give them the same personal attention as would be given by physicians engaged directly by the employee. The theory that it is cheaper for the employer to furnish unlimited medical and hospital service on the ground that it reduces compensation costs by an early restoration of earning power has not been universally accepted by employers or insurers. The attitude of the employers is reflected in the medical provisions of the compensation laws themselves. The fact that, with three exceptions, none of the 37 States provides for unlimited medical service shows quite clearly the opposition of the employers. Consequently, the workman may be pardoned if he views the disinterestedness of the employer's medical service with suspicion.

Another important problem is to determine when the injured workman has sufficiently recovered to be able to return to work. Ob-

viously it is to the employer's interest to reduce the disability period as much as possible, and frequently this fact unduly influences the decision of the employer's physician, especially if employed on a contract basis.

The third factor in the movement for free choice has been the opposition of the medical profession to the medical practices developed under the compensation laws. Prior to the enactment of these laws there had been no distinction in the treatment of injuries which arose out of the employment and those which arose outside of the employment. In each case the person sustaining the injury was financially responsible for the medical and hospital treatment furnished; but since a large proportion of such persons were unable to pay for the treatment received the hospitals and physicians accepted them as charity patients, usually charging low rates and collecting fees only in cases where the patient could afford to pay. The compensation laws, however, definitely placed upon the employer the burden of furnishing medical services in industrial accident cases; but no provision was made as to medical fees, except that they should be reasonable, and in a number of States that they should be limited to such charges as prevail in the same community for similar treatment of injured persons of a like standard of living when such treatment is paid for by injured persons. In view of these facts the medical profession on the whole maintained that medical services in industrial cases should be remunerated at full value and that such cut rates and charity as were granted the sufferers by hospitals and doctors heretofore should be discontinued. There was also a tendency on the part of some physicians to pad their bills and raise their rates. As might be expected, such a condition immediately resulted in numerous and acrimonious disputes between the medical profession on the one hand and the employers and insurance carriers on the other, as to medical fees. The compensation commissions were usually able to effect a working compromise, but such compromises have been satisfactory to none. Insurance companies have refused to pay medical bills unless they were satisfactory, and physicians in retaliation have threatened to refuse to treat industrial cases unless guaranteed their regular rates. As a counter measure employers and insurance carriers are beginning to furnish their own medical service, establishing dispensaries and hospitals and engaging surgeons and trained nurses. Obviously a continued extension of the system of establishment hospitals and contract doctors would ultimately exclude a large majority of the medical profession from the field of industrial surgery. It is the evident extension of this practice that causes apprehension in the ranks of the profession and is the motive power behind their movement for free choice of physicians.

As a solution of this problem it has been suggested¹ that the employee be allowed to select the physician, but that the choice be limited to such members of the profession as are competent and experienced in the practice of industrial surgery. Qualifications for membership in such a panel may be determined by the legislature and ultimate approval given by compensation commissions, State medical associations, or such other bodies as may be deemed advisable. This is not merely an academic view, since under the present system of selection by the employer it has been the practice in some States to allow employees to choose a physician from a panel nominated by the employer or insurance carrier. It is urged that this system of having special panels would eliminate incompetent physicians from the practice of industrial surgery and at the same time retain the beneficial results obtained through free choice.

¹ I. M. Rubinow, director, Bureau of Social Statistics, New York City.

UNIFORM STATISTICS OF ACCIDENTS AND COMPENSATION INSURANCE COST.

REPORT OF THE COMMITTEE ON STATISTICS AND COMPENSATION INSURANCE COST OF THE INTERNATIONAL ASSOCIATION OF INDUSTRIAL ACCIDENT BOARDS AND COMMISSIONS, 1917.

At the last convention of this association your committee reported the completion of standard classifications of industries, of accident causes, and of industrial injuries by location and nature of injury and extent of disability. The committee recommendations on these heads were officially adopted by the association and have been put into practical effect by several States. It is hoped that the foundations have thereby been laid for uniform and intelligible statistics of work accidents.

During the past year your committee has held four meetings, comprising in all some twelve sessions.¹ The standard tables for the presentation of accident statistics, begun in February, 1916, were first taken up and completed. The standard list of statistical definitions was next revised and extended. Lastly, the committee has worked out a standard scale of weights designed to express the severity of accidental injuries in terms of time loss.

The standard tables proposed by the committee are appended to this report, and are designated by serial numbers and titles. These tables are intended to bring out in convenient form and in due correlation the significant facts of work accidents. Next to the use of standard classifications, nothing will contribute so much to the value of statistical reports as uniform and effective organization of material. Conversely, the lack of any standard organization has detracted greatly from the usefulness of most statistical reports heretofore published by the several States. In many cases essential information which was available in the files of the board or commis-

¹ These four meetings were held as follows :

Chicago, Ill., May 31 and June 1, 1916. Those present at this meeting were E. H. Downey, chairman; W. H. Burhop, F. C. Croxton, L. W. Hatch, Don L. Lescohier, C. H. Verrill; and, by invitation, G. F. Michelbacher, of the National Workmen's Compensation Service Bureau.

Buffalo, N. Y., July 19, 1916. Those present were E. H. Downey, chairman; W. H. Burhop, F. C. Croxton, T. N. Dean, L. W. Hatch, Royal Meeker; and, by invitation, G. F. Michelbacher, of the National Workmen's Compensation Service Bureau.

New York City, Nov. 3 and 4, 1916. Those present were E. H. Downey, chairman; P. A. Broderick, T. N. Dean, L. W. Hatch, Royal Meeker, C. H. Verrill; and, by invitation, Louis I. Dublin, of the Metropolitan Life Insurance Co.; Arne Fisher, of the Prudential Insurance Co.; and G. F. Michelbacher, of the National Workmen's Compensation Service Bureau.

Boston, Mass., Apr. 18 and 19, 1917. Those present were E. H. Downey, chairman; P. A. Broderick, W. H. Burhop, T. N. Dean, L. W. Hatch, Royal Meeker, C. H. Verrill, and E. E. Watson.

sion is not disclosed by the published reports, because the statistician did not perceive the significance of the facts in his possession. In other cases again it is necessary to wade through hundreds of pages to obtain facts which can and should be so clearly set forth that he who runs may read. A moderate number of standard tables, thoroughly worked out, will present more information in far more accessible form than is ordinarily contained in ten times the bulk of printed matter.

The standard tables proposed by your committee are so designed as to admit of adaptation to the administrative needs and financial resources of different jurisdictions. Thus, Table 1 substantially in the form proposed, should be published by all jurisdictions. This table will give the essential facts of industrial accidents by industries. The exposures for this table are calculated both in terms of pay roll and of number of full-time workers. It is expected that the industries will be shown in such detail as the volume of exposure and the financial resources of the particular commission will admit.

Table 2 is possible only for those jurisdictions in which injuries and diseases not attributable to accident are reported.

Table 3 is a combination of Tables 1 and 2. In most jurisdictions Table 1 will answer all purposes of Tables 1, 2, and 3. In those jurisdictions which take account of injuries other than by accident, Table 3 will answer all purposes of Tables 1 and 2, provided that a separate list of injuries not due to accident is published.

Table 4 exhibits the number and severity of injuries by causes. This is in many respects the most important table of the entire list. It is particularly desirable that in publishing this table the standard classification of accident causes be adhered to.

Table 5 shows the compensation cost of injuries by severity of injury. The table as drawn provides for the separation of benefits, but it is not particularly essential to carry this separation further than a distinction between compensation and medical aid. In other words, a table in which columns 5, 6, 7, and 8 were consolidated in one would answer all practical purposes.

Table 6 will be needed only in those jurisdictions which compensate for occupational diseases.

Tables 7 and 8 are alternative. It is recommended that where the information is available the degree of impairment of each specified member shall be shown, but in those jurisdictions in which compensation is based upon loss of earnings rather than impairment of the particular member Table 8 may be given in lieu of Table 7.

Table 9 is intended to show the importance of infection as a cause of disability and death. It seems especially desirable that this table should be made in order to emphasize the possibilities of reducing the duration of disabilities by efficient first aid and medical treatment.

Table 10 is intended to show the character of injuries due to each particular cause. It is especially desired to bring out the causes which are responsible for the greater number of dislocations and fractures. Table 10, however, is less important by far than Table 4.

Table 11 is intended to show the character of injuries which result in death and in permanent disability. It is particularly intended for the benefit of the medical profession. Obviously medical attention ought to be centered upon those injuries which are producing the greater number of serious disabilities.

Your committee has likewise devoted much time to the consideration of accident severity, with a view to obtaining a standard measure of industrial hazard. Hitherto every attempt to compare the hazards of different industries, or of the same industry at different times and places, has broken down from sheer lack of any adequate basis of comparison. The mere number of industrial accidents per thousand employees per annum—the ordinary definition of accident rate—is not a measure of hazard, because it takes no account of accident severity. Heretofore, indeed, the accident rates of different jurisdictions have been wholly incommensurate because of the immense disparity in the definition of reportable accidents. The accident rates of the German Empire, e. g., are based only on the comparatively small number of accidents which cause disability for more than 13 weeks, those of France are derived from accidents which cause disability for more than 4 days, while Massachusetts includes every accident reported, however trivial in character. Obviously a tenfold difference in accident rates, as between Massachusetts and Germany, would indicate nothing as to relative hazard. This particular difficulty may, of course, be overcome by general adoption of the standard definition of "tabulatable accident" which your committee has already recommended. But a more fundamental obstacle lies just behind. The immense majority of tabulatable accidents cause only a few days' disability, with no permanent impairment of earning capacity. A single death will produce greater economic loss to the victim's family and to the community at large than many hundred minor temporary disabilities. This difference would matter little for the purpose in hand if the number of deaths and of permanent injuries bore any reasonably uniform relation to the number of tabulatable injuries. Unfortunately, however, the very reverse is the case. In some of the lighter machine trades there may be a thousand tabulatable accidents for one fatality, whereas among coal miners, railway trainmen, lumbermen, and structural-iron workers the proportion of fatal and serious injuries is many fold greater than in industry as a whole. Accident rates, therefore, as ordinarily compiled are worse than inaccurate; they are positively misleading.

Various attempts have been made to overcome this defect by publishing, not one but several, accident rates for each industry. Thus German and Austrian statistics show the whole number of accidents, the number of deaths, and the number of permanent injuries per thousand full-time workmen. But permanent injuries again cover a wide range—from the loss of the tip of a little finger to total paralysis of the body. And the several degrees of permanent disability are most unevenly distributed among industrial employments. In woodworking industries, e. g., finger injuries predominate; in logging and in coal mining there is an excessive number of permanent total disabilities. To be at all significant the analysis of accident rates must be carried further. We must know not merely the number of all permanent injuries, but the number causing total incapacity and the number involving loss of hand, foot, eye, or fingers. The moment such an analysis is made, however, the resultant accident rates become too multiform for practical use. No mind can compare six columns of figures at one time. Neither are the separate comparisons capable of any intelligent summation. If the several rates happen to vary in the same direction, the meaning is sufficiently clear, but how if a decrease in fatalities is accompanied by a marked increase in permanent and temporary disabilities? What is wanted evidently is some common denominator in terms of which can be expressed the total volume of accidental injury per unit of exposure—a single expression which shall combine the number with the severity of work accidents.

In seeking for such a common denominator your committee early fixed upon time loss as the most significant, stable, and convenient expression of the economic cost of industrial accidents.¹ Obviously,

¹ A system of assigning time losses for a computation of accident severity rates was worked out by the U. S. Bureau of Labor Statistics in the early part of 1914, and was applied in the preparation of a group of charts exhibited by the bureau at the Panama-Pacific International Exposition. As first used, the time allowances, as fixed by the Wisconsin workmen's compensation act for specific injuries, were employed. Later, these time allowances were changed, death being based on life expectancy and permanent disabilities on the New York scale increased 50 per cent. This scale has since been used by the Bureau in two reports now in press—one presenting the results of a study of accidents and accident prevention in the machine-building industry, and the other, a similar study, covering the iron and steel industry. The method employed has been explained by the Bureau in an article entitled "A new method of computing accident rates," in the July, 1916, issue of the MONTHLY REVIEW.

The computation of an accident severity rate by the use of time losses has occurred to a number of other persons, independently. At the Third Annual Safety Congress of the National Safety Council, held in Chicago, Oct. 13-15, 1914 (Proceedings, pp. 133, 134), Mr. Dudley R. Kennedy, of the Youngstown Sheet & Tube Co., made suggestions in regard to severity rates along the same line, and early in 1915 submitted to the National Safety Council a plan somewhat similar to that adopted by the committee. A scale of severity weighting was worked out by the Wisconsin Industrial Commission in the latter part of 1914, and was applied to the accident statistics of that State in a bulletin issued Aug. 1, 1915. So far as can be ascertained, the above are the only published tabulations or suggestions for the compilation of accident statistics classified on the basis of time losses.

it is only the loss of time due to accidents that is susceptible of satisfactory measurement. The physical or physiological results can not be reduced to a common denominator and the cost in terms of human suffering can neither be estimated nor expressed in standard units. Obviously, again, the economic cost of accidents can not be measured by the compensation paid. No one of our American acts even purports to give full compensation for the worker's immediate economic loss, and no two of them agree in the scale of benefits assigned to particular injuries. Compensation cost in industries of equal hazard accordingly fluctuates enormously from State to State and the aggregate cost in every jurisdiction grossly understates the relative importance of permanent disabilities. Wage loss likewise, even if it could be accurately obtained, is not a satisfactory index of occupational hazard. Wages vary tremendously from occupation to occupation and from time to time, insomuch that no constant relation can be predicated between extent of disability on the one hand and wage loss upon the other hand. The same wage loss per thousand employees per annum will consequently not indicate the same hazard in different occupations or in different communities. The computation of wage loss, moreover, presents numerous difficulties, more especially in the case of fatal and permanent injuries. Shall it be assumed that the particular wage rates prevailing at the time of injury will continue throughout the working life of the injured? Shall the prospective earnings of an apprentice be computed from his present earnings or from the wage which he would probably earn as a journeyman? Shall the foregone earnings of 20 years be taken at face value or discounted for interest?

Time loss, on the contrary, is relatively definite and stable. It relates directly to the physiological results of accidental injury and is, by comparison with compensation cost or with wage loss, but little affected by the occupation of the injured, the prevailing rate of wages, the scale of legal benefits, or the spirit of courts and commissions. A month's disability per employee per annum means the same degree of occupational hazard, whether it occurs among lumbermen or locomotive engineers, in the State of Washington or the principality of Wales, in 1900 or in 1920. If, then, all injuries by accident can be reduced to this one common denominator, we shall have what has heretofore been wanting—an index of industrial accident hazard.

In the attempt to express accident severity in terms of time loss temporary disabilities present few problems. The duration of disability in these cases is shown on the face of the record. The only conversion required by the proposed plan is that from calendar to working days. Your committee having previously recommended, on grounds set forth in an earlier report, that exposures be expressed

in man years of 300 days each, it follows that the duration of disabilities should likewise be expressed in working days. It is therefore recommended that the number of working days chargeable to temporary disabilities be uniformly obtained by deducting one-seventh from the number of calendar days intervening between the beginning of disability and the recovery therefrom. Your committee is not unmindful of the fact that the seven-day week prevails in certain occupations and the five-and-a-half-day week in others. But it must be remembered that time loss is here used as a measure of accident severity. A disability of one calendar week represents the same severity of injury whatever the length of the working day or the working week.

More complicated questions arise in the consideration of fatal accidents. The governing principle, indeed, is easy of determination. Death entails a total cessation of labor power and the resultant time loss is evidently the working life expectancy of the individual concerned. It is in the detailed application of this principle that difficulties are encountered. To the discredit of our governments, be it said that no American records exist to show the average age at which industrial workers cease to be employable, or the number of productive years which a wage earner of given age may reasonably anticipate. In the absence of such records, your committee was forced to rely upon personal judgment, checked and guided by several special investigations.¹ Working life expectancy is a function of mortality and superannuation; it is less than life expectancy by the interval between voluntary or enforced retirement from gainful employment and death. It is well known, however, that the life expectancy of our industrial population is markedly below that experienced by life insurance companies, while the evidence of accident statistics, as well as common knowledge, goes to show that relatively few wageworkers maintain a footing in industry beyond the age of 55. On the whole, it seems reasonable to assume that working life expectancy, between ages 20 and 50, is about two-thirds of the full life expectancy shown by the American Experience Table. The compensation experience of a number of States indicates that the average age of persons fatally injured by industrial accidents is approximately 33 years. Your committee, accordingly, adopted 20 years, or 6,000 working days, as the average severity weight of fatal accidents.

¹ Mr. G. F. Michelbacher constructed a very ingenious table of working life expectancies from the ages of persons reported as injured by industrial accidents in California and Ohio. His results, while admittedly not conclusive because of inadequate data, were of special value to the committee. Collateral evidence, tending to support the committee's conclusions, will be found in the Invalidity Insurance Experience of the German Empire and in the investigations of the British Parliamentary Committees on Old Age Pensions.

The question whether each fatal accident should receive a weight proportionate to the calculated working life expectancy of the individual involved was considered at length. It is not doubted that significant differences exist in the average ages of workmen in different industries, in different occupations within the same industry, and in different communities within the same occupational lines. Nor is it disputable that more labor power is lost by the death of a man at 20 than at 50. But the age of the individual killed is, after all, not particularly indicative as to the character of the hazard which produced the injury. The proposed plan, moreover, is to be applied to industries by States, and the number of fatalities in most industry-State subdivisions will be small. Hence, if the severity weight were to vary with the age of the injured—if a death at 20, e. g., were to count for 10,000 days and a death at 50 for only 3,000—the resultant severity rates would be distorted by merely chance deviations. Your committee, therefore, recommends that a uniform time-loss value of 6,000 days be assigned to each fatal accident.

The severity weight of permanent total disability was settled upon the principles just discussed. Permanent total disability, equally with death, entails a time loss equivalent to the full working life expectancy of the person injured. For the reasons above recounted, it was deemed best to use an average expectancy rather than the actual (calculated) expectancy of each individual. Finally, it was resolved to recommend the same weight as for a death. Against this course may be urged that a permanent total disability entails a greater economic burden upon the sufferer's family and upon the community than a death. Were the question solely one of economic loss, permanent total disability might reasonably be valued at the full working life expectancy and a death at, say, two-thirds thereof. But the question is one of industrial hazard and not merely one of economic loss. Surely it can not reasonably be said that an accident which results in permanent total disability indicates a greater hazard than an accident which results in death. No injury can be more severe—and we are speaking of an accident severity—than a fatal injury. It so happens, furthermore, that the average age of those who are permanently totally disabled by accident is higher than that of persons who die from accidental injuries—about 42 as against 33 years.¹ The fact is that the natural powers of recuperation fail with advancing years, so that a given injury is more likely to cause serious permanent disability in an older than in a younger man. The use of actual working life expectancies would, on this account, give lower average weights for permanent total disabilities than for deaths. Lastly, it is by no means always true that a per-

¹ This difference is found in both American and European experience.

manent total disability involves a net economic burden. A man may be incapacitated for employment and still contribute something to the family income. Taken all in all, therefore, your committee recommends that permanent total disabilities, like deaths, be valued uniformly at 6,000 working days each.

Permanent partial disabilities clearly ought to be rated in percentages of permanent total disability. Precisely here, however, is the nub of all severity rating, namely, the determination of the degree of permanent disability. It might well be supposed by one not familiar with the situation that the precise extent of disability, being a material fact in the fixation of compensation, would invariably appear on the face of the records. Such, however, is nowhere the case. In most American jurisdictions permanent disabilities are graded by a legislative schedule which assigns so many weeks' compensation to each enumerated physical injury. Even in those jurisdictions, as California, Washington, and Ontario, where no such schedule is established by law, the administrative practice is not widely different. Almost everywhere compensation is determined not by the actual impairment of earnings but by the loss or disability of specified bodily members.¹

Such being the run of facts in the record, the statistician is constrained to follow the same course in the severity rating of permanent disabilities. He has no choice but to rely upon the actual bodily impairments which the records disclose as indicia of the extent of disability. Why not, then, rate these disabilities in accordance with the specific indemnity schedule, statutory or administrative, of each particular jurisdiction? Because the numerous American schedules differ widely among themselves in both the absolute and the relative rating of the same injuries; because certain jurisdictions have no official schedule, and the official schedules of other jurisdictions omit many permanent injuries of common occurrence; because, finally, no one of these schedules (unless it be Ontario's) attempts to give an adequate rating to permanent as compared with temporary disabilities. The use of any one of these schedules would understate the relative hazard of extrahazardous industries, while the use of all of them together would produce severity rates as little capable of combination or comparison as the official accident rates of Massachusetts and the German Empire.

Your committee, in the course of its investigation, carefully compared all of the American specific indemnity schedules as well as the French and German adjudications, the Austrian official ratings, the scale of the Italian law, the Russian scale, and the European

¹ Massachusetts is a partial exception, as are also Pennsylvania and other States, as respects nonenumerated injuries. Such exceptions, however, are rather *de jure* than *de facto*.

scales of Imbert, Miller, Bähr, Thiem, and Könen-Köln.¹ It was found that none of the existing schedules is derived from a statistical study of loss of earnings as the result of injury. The best of the American schedules are based upon local investigations of limited scope or are borrowed from European scales, which in turn represent averages of awards in various countries more or less modified by medical or otherwise expert judgment.² Your committee, after mature deliberation, was unable to recommend any one of these scales in its entirety. It is the unanimous judgment of the committee that the American schedules, without exception, underrate the more serious permanent injuries, such as loss of hand, leg, or eye, and that the European scales overrate such minor injuries as the loss of fingers and toes. These considerations appeared to warrant the construction of the composite scale appended to this report.

The schedule recommended is less detailed than several of the extant lists, but is believed to be sufficient for its purpose. In adjudging compensation it is customary and proper to distinguish between the loss of an index and a ring finger and between the loss of one phalanx and an entire digit. But these refinements are quite unimportant for the calculation of accident severity rates by industries or occupations. Permanent injuries to the fingers are very numerous and they occur in an endless variety of combinations. In any considerable exposure, however, it will be found that the relative frequency of the many specific finger injuries do not greatly vary, so that an average value for all will give nearly the same aggregate time loss as a specific value for each.³

It will be observed that the scale recommended takes no account of occupational differences. Your committee recognizes, of course, that the same physical injury causes more serious disability for some occupations than for others, but these differences are believed not to be significant from the standpoint of accident severity or of industrial hazard. The committee scale is not intended to serve as a basis for awarding compensation but as a standard for comparing the severity of accidental injuries and the accident hazards of industrial employments. The loss of a leg indicates an accident of the same severity whether it befall a stevedore or an elevator operator, and the annual loss of 10 index fingers per thousand full-time workers points to the same degree of hazard in one industry as

¹ For a comparison of these scales, see Bulletin 203 of the United States Bureau of Labor Statistics, p. 94 et seq.

² See article entitled "Determination of the consequences of industrial accidents in Austria," in MONTHLY REVIEW of the United States Bureau of Labor Statistics, December, 1916, p. 731 et seq.

³ The average values recommended for permanent injuries to fingers, thumbs, and toes were calculated from the very detailed statistics of the Industrial Commission of Wisconsin.

another. In fine your committee concludes that the severity of accidental injuries must be adjudged from their physiological effects and that the average time loss produced by each physiological class of injuries is the fairest common measure both of accident severity and of industrial hazards.

To sum up, your committee recommends that a severity weight be assigned to each industrial accident. In the case of a temporary disability this weight is the actual duration of disablement in working-days. For a death or a permanent total disability the severity weight is the working life expectancy, which is taken at the average value of 6,000 working-days. For a permanent partial disability the weight is an aliquot part of 6,000 working-days, proportionate to the average degree of disability resulting from the particular bodily impairment involved. The aggregate time loss so obtained, divided by the number of 300-day workmen, is the accident severity rate, or time loss per full-time workmen. The time loss so obtained is a common denominator by means of which the number and severity of accidents per unit of exposure are combined in a single expression.

The severity rate above described would serve all the purposes of an index number of occupational hazards. It would afford, for the first time, a common basis for the comparison of accident experience from year to year, from industry to industry, from establishment to establishment, and from State to State. It should prove a powerful stimulus to safety first by providing a concrete test of results. Applied to compensation insurance, it would furnish, what has hitherto been lacking, a statistical basis for both schedule and experience rating.

No one will claim perfection for the scheme here proposed. Intelligent opinions will differ on many of the points involved. The relative severity of accidental injuries must always be a matter for experienced judgment rather than mathematical calculation. For that very reason, however, the collective judgment of competent statisticians is a safer guide than the opinion of the best informed individual. Above all, the problem is one in which uniformity is more important than meticulous accuracy. If the schedule of relative weights is reasonable upon the whole, and is uniformly applied, the results will be sufficiently accurate for all practical purposes.

Your committee has now completed the preliminary work of standardization for which the committee was originally created. But accident statistics is emphatically a living subject, and the whole field of compensation is so new that two years' time has brought forth many changes. Experience in the several States already has developed the need of revision and extension in the standard classifications heretofore adopted. Continuous development besides will require continued interchange of views and experience. It is therefore

recommended that the committee on statistics and compensation insurance cost be continued, with such changes in personnel as may be thought expedient.

APPENDIX A.—STANDARD DEFINITIONS ADOPTED BY THE COMMITTEE.

1. *Tabulatable accidents, diseases, and injuries.*—All accidents, diseases, and injuries arising out of the employment and resulting in death, permanent disability or in the loss of time other than the remainder of the day, shift, or turn on which the injury was incurred should be classified as "tabulatable accidents, diseases, and injuries," and a report of all such accidents, diseases and injuries to some State or national authority should be required.

2. In publishing the statistics of accidents, diseases, and injuries, clear definitions of the terms used in the tables should be given either in the tables, in prefatory notes thereto, or in readily accessible text.

3. *Reportable accidents, diseases, and injuries* should include all tabulatable accidents, diseases, and injuries, and all nontabulatable accidents, diseases, and injuries which require any medical expenditure.

4. *Compensable accidents, diseases, and injuries* as used in any report in accordance with the practice in the particular State, should be shown separately and clearly defined.

5. *Medical service.*—Information in regard to medical service expenditures should be given as fully as possible. If the statistics given cover only a part of the cases dealt with under the law that fact should be made clear.

6. *Permanent total disability.*—To this group should be assigned every accident, disease, or injury which is designated by statute as permanent total disability, or which permanently incapacitates the workman from performing any work continuously in any gainful occupation.

7. *Permanent partial disability.*—To this group should be assigned every accident, disease, or injury (less than permanent total disability) which results in the loss of any member of the body or part thereof, or in the permanent impairment of any function of the body.

8. *Accident frequency rates per 1,000 full-time workers.*—Accident-frequency rates should be expressed in terms of the number of accidents per 1,000 full-time workers, i. e., workers employed 300 days of 10 hours each.¹ The basis used for the average number of men should be the actual number of man hours for the year; that is, the total working time for all employees of the establishment or the department for the year reduced to the number of hours required for one man to do the same work. This should be taken from exact records if such records are in existence. If this exact information is not available in this form in the records, then an approximation should be computed by taking the number of men at work (or enrolled) on a certain day of each month in the year, and the average of these numbers multiplied by the number of hours worked by the establishment for the year would be the number of man hours measuring the exposure to risk for the year.

¹ This is in accordance with the practice of Germany, Austria, and a number of other European countries, and also in accordance with the recommendations of a joint committee of the Permanent International Committee on Social Insurance and the International Institute of Statistics. This method was used in Germany as early as 1897. See Germany: Amtliche Nachrichten des Reichsversicherungsamts, 1899. Beiheft. I. Teil, Unfallstatistik für das Jahr., 1897. Berlin, 1899, pp. 5 ff. See also Bulletin de l'Institut International de Statistique, Vol. XV, pp. 54, 55. London, 1906; *ibid.*, Vol. XVIII, Part II, p. 461, et seq. Paris, 1909.

9. *Accident rates per \$100,000 of audited pay-roll exposure.*—Accident rates should also be computed on the basis of \$100,000 of pay roll. This information should be published for all State Funds and for the entire jurisdiction where practicable.

10. *Accident severity rates.*—Accident severity should be expressed in terms of days lost, computed in accordance with the table and explanations appended hereto (Appendix C).

Severity rates should be expressed in terms of days lost per 300-day worker.

11. In computing the duration of temporary disabilities, the day of the accident should be counted as the first day.

APPENDIX B.—STANDARD TABLES SUGGESTED BY THE COMMITTEE.

TABLE 1.—FREQUENCY OF ACCIDENTS, BY INDUSTRIES AND EXTENT OF DISABILITY.

Industries. <i>a</i>	Number of full-time workers.	Pay roll exposure.	Number of tabulatable accidents.							Rates.		
			Total.	Deaths.	Perma- nent total disabil- ities.	Perma- nent partial disabil- ities.	Temporary disabili- ties.			Per 1,000 full- time work- ers.	Per \$100,000 of au- dited pay roll.	
							Over 2 weeks.	Over 1 to 2 weeks.	1 week and under.			
1	2	3	4	5	6	7	8	9	10	11	12	

a For list of industries see Bulletin 201 of the U. S. Bureau of Labor Statistics.

NOTE.—This table should not include cases of nonaccidental injuries and occupational diseases, which are to be included in Table 2.

TABLE 2.—FREQUENCY OF INJURIES, BY INDUSTRIES AND EXTENT OF DISABILITY.

[This table should include all cases of injuries and occupational diseases not definitely assignable to accidents.]

Industries. <i>a</i>	Number of full-time workers.	Pay roll exposure.	Number of tabulatable injuries.							Rates.		
			Total.	Deaths.	Perma- nent total disabil- ities.	Perma- nent partial disabil- ities.	Temporary disabili- ties.			Per 1,000 full- time work- ers.	Per \$100,000 of au- dited pay roll.	
							Over 2 weeks.	Over 1 to 2 weeks.	1 week and under.			
1	2	3	4	5	6	7	8	9	10	11	12	

a For list of industries see Bulletin 201 of the U. S. Bureau of Labor Statistics.

TABLE 3.—SEVERITY OF INJURIES, BY INDUSTRIES AND EXTENT OF DISABILITY.

Industries. ^a	Number of full-time workers.	Pay-roll exposure.	Days lost due to— ^b							Rates.	
			Total days lost.	Deaths.	Perma-nent total disabili-ties.	Perma-nent partial disabili-ties.	Temporary disabilities.			Days lost per 1,000 full-time work-ers.	Days lost per \$100,000 of aud-ited pay roll.
							Over 2 weeks.	Over 1 to 2 weeks.	1 week and under.		
1	2	3	4	5	6	7	8	9	10	11	12

^a For list of industries see Bulletin 201 of the U. S. Bureau of Labor Statistics.

^b Days lost should be expressed in terms of working-days. Calendar days can be converted into working-days by multiplying by 6/7.

TABLE 4.—CAUSES OF ACCIDENTS, BY EXTENT OF DISABILITY.

Causes.	Number of tabulatable accidents.							Days lost due to— ^a						
	Total.	Deaths.	Perma- nent total disabil- ities.	Perma- nent partial disabil- ities.	Temporary disabilities.			Total.	Deaths.	Perma- nent total disabil- ities.	Perma- nent partial disabil- ities.	Temporary disabilities.		
					Over 2 weeks.	Over 1 to 2 weeks.	1 week and under.					Over 2 weeks.	Over 1 to 2 weeks.	1 week and under.
1	2	3	4	5	6	7		9	10	11	12	13	14	15
Machinery: Prime movers Steam engines Gas or gasoline engines Etc. [For full list of causes see Bulletin 201 of the U. S. Bureau of Labor Statistics.]														

^a Days lost should be expressed in terms of working-days. Calendar days can be converted into working-days by multiplying by 6/7.

NOTE.—This table should be made for each industry schedule also and for all important groups. Further analysis of causes of fatalities and permanent injuries is suggested. Analysis by location of injury is also suggested.

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TABLE 5.—COMPENSATION AND MEDICAL AID INCURRED ON ACCOUNT OF ACCIDENTS, BY EXTENT OF DISABILITY.

Injuries causing—	Number of cases.	Benefits paid and outstanding.						
		Total amount	Average amount per case.	Compensation.				Medical.
				Death and funeral. ^a	Permanent total disabilities.	Permanent partial disabilities.	Temporary disabilities.	
1	2	3	4	5	6	7	8	9
Deaths, with dependents								
Deaths, without dependents								
Permanent total disabilities:								
Loss of both eyes								
Loss of both arms								
Loss of both hands								
Loss of both legs								
Loss of both feet								
Paralysis of both arms or legs								
Loss of mental faculties								
Other permanent total disability								
Total permanent total disabilities								
Permanent partial disabilities:								
Dismemberments								
Loss of arm								
Loss of hand								
Loss of thumb								
Loss of index finger								
Loss of middle finger								
Loss of ring finger								
Loss of little finger								
Loss of thumb and 1 or more fingers								
Loss of 2 or more fingers								
Loss of 1 phalanx of thumb								
Loss of phalanx of index finger								
Loss of phalanx of middle finger								
Loss of phalanx of ring finger								
Loss of phalanx of little finger								
Loss of fingers with injuries to other fingers								
Loss of 1 leg								
Loss of toes								
Loss of 1 eye								
Loss of 1 eye with injury to the other								
Other permanent partial disabilities								
Total permanent partial disabilities								
Temporary disabilities: ^b								
1 day								
2 days								
3 days, etc., up to 14 days								
Over 2 to 3 weeks								
Over 3 to 4 weeks								
Over 4 to 5 weeks								
Over 5 to 6 weeks								
Over 6 to 7 weeks								
Over 7 to 8 weeks								
Over 8 to 9 weeks								
Over 9 to 10 weeks								
Over 10 to 11 weeks								
Over 11 to 12 weeks								
Over 12 to 13 weeks								
Over 13 to 26 weeks								
Over 26 to 39 weeks								
Over 39 to 52 weeks								
Over 52 weeks								
Total temporary disabilities								
Grand total								

[NOTE.—The action of the committee in regard to Table 5 provided for the use of a "standard list" of permanent total disabilities based on the "Standard accident table" and for a similar "standard list" of dismemberments under permanent partial disabilities.

The "Standard accident table" contains no list of permanent total disabilities but only a list of dismemberments. The list of permanent total disabilities here given is taken from some of the State laws. These standard lists have not yet been prepared.]

^a Form of notes to be used whenever applicable, e. g., including — cases of funeral benefits amounting to \$—. Not reported in — cases.

^b In this table the duration of temporary disabilities should be expressed in calendar days, as the table is not intended for weighting purposes.

TABLE 6.—COMPENSATION AND MEDICAL AID INCURRED ON ACCOUNT OF OCCUPATIONAL DISEASES, BY EXTENT OF DISABILITY.

Occupational diseases causing—	Total cases.	Benefits paid and outstanding.						
		Total amount	Average amount per case.	Compensation.				Medical.
				Death and funeral. (^a)	Perma- nent total disa- bilities.	Perma- nent par- tial disa- bilities.	Tem- po- rary disa- bilities.	
1	2	3	4	5	6	7	8	9
Deaths, with dependents								
Deaths, without dependents								
Permanent total disabilities								
Permanent partial disabilities involv- ing specified percentage of impair- ment:								
20 and under								
21 to 40								
41 to 60								
61 to 80								
81 and over								
Total, permanent partial disa- bilities								
Temporary disabilities: ^b								
1 day								
2 days								
3 days, etc., up to 14 days								
Over 2 to 3 weeks								
Over 3 to 4 weeks								
Over 4 to 5 weeks								
Over 5 to 6 weeks								
Over 6 to 7 weeks								
Over 7 to 8 weeks								
Over 8 to 9 weeks								
Over 9 to 10 weeks								
Over 10 to 11 weeks								
Over 11 to 12 weeks								
Over 12 to 13 weeks								
Over 13 to 26 weeks								
Over 26 to 39 weeks								
Over 39 to 52 weeks								
Over 52 weeks								
Total, temporary disabilities								
Grand total								

^a Form of notes to be used whenever applicable, e. g., including — cases of funeral benefits amounting to \$—, not reported in — cases.

^b In this table the duration of temporary disabilities should be expressed in calendar days, as the table is not intended for weighting purposes.

TABLE 7.—PERMANENT PARTIAL DISABILITIES, BY LOCATION OF INJURY AND PERCENTAGE OF IMPAIRMENT OF MEMBER.

Location of injury. ^a	Total cases.	Number of cases (not dismemberments) involving specified percentage of impairment of member.					Number of dismemberments.
		20 and under.	21 to 40.	41 to 60.	61 to 80.	81 and over.	
1	2	3	4	5	6	7	8

^a For classification of location of injury for use in the stub of this table, see Bulletin 201 of the U. S. Bureau of Labor Statistics.

TABLE 8.—PERMANENT DISABILITIES, BY PERCENTAGE OF IMPAIRMENT OF EARNING CAPACITY.

Location of injury. ^a	Total cases.	10 per cent and under.	11 per cent and under.	21 per cent and under.	31 per cent and under.	41 per cent and under.	51 per cent and under.	61 per cent and under.	71 per cent and under.	81 per cent and under.	91 per cent and under.	Total disability.
1	2	3	4	5	6	7	8	9	10	11	12	13

^a For classification of location of injury for use in this table, see Bulletin 201 of the U. S. Bureau of Labor Statistics.

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TABLE 9.—INFECTED INJURIES, BY NATURE OF INJURY AND EXTENT OF RESULTING DISABILITY.

	Total.	Bruises.	Burns and scalds.	Con-cussions.	Cuts, punctures, and lac-erations.	Dis-locations.	Frac-tures.	Sprains and strains.	All other.
1	2	3	4	5	6	7	8	9	10
Total injuries									
Total infected injuries									
Infected injuries result- ing in—									
Deaths									
Total loss of—									
Eye									
Arm									
Hand									
Leg									
Foot									
Fingers									
Toes									
Other members									
Permanent impair- ment of—									
Eye									
Arm									
Hand									
Leg									
Foot									
Fingers									
Toes									
Other members									
Temporary disabili- ties—									
Number									
Days lost ^a									
Average dura- tion									
Total benefits, including medical, hospital, etc.									

^a In this table the duration of temporary disabilities should be expressed in calendar days, as the table is not intended for weighting purposes.

TABLE 10.—NATURE OF INJURY, BY CAUSE.

Cause of accident.	Bruises.	Burns and scalds.	Con-cussions.	Cuts, punctures, and lac-erations.	Dis-locations.	Frac-tures.	Sprains and strains.	All other injuries.	Total injuries.	Infected injuries.
1	2	3	4	5	6	7	8	9	10	11
Machinery:										
Prime movers										
Steam engines										
Gas or gasoline engines										
Electric motors and dymamos										
Etc.										

NOTE.—For classification of causes, see Bulletin 201 of the United States Bureau of Labor Statistics.

TABLE 11.—ACCIDENTS, BY NATURE AND LOCATION OF INJURY AND EXTENT OF DISABILITY.

Nature and location of injury. ^a	Total cases.	Deaths.	Total permanent disabilities.	Number of permanent disabilities (not dismemberments) involving specified percentage of impairment of member.					Number of dismemberments.	Temporary disabilities.	
				20 and under.	21 to 40.	41 to 60.	61 to 80.	81 and over.		Number.	Average duration. ^b
				5	6	7	8	9			
1	2	3	4	5	6	7	8	9	10	11	12
A. Dislocations											
B. Fractures											
C. Burns											
D. See other											

^a For classification of location of injury for use in the stub of this table, see Bulletin 201 of the U. S. Bureau of Labor Statistics.

^b In this table the duration of temporary disabilities should be expressed in calendar days, as the table is not intended for weighting purposes.

NOTE.—Degree of impairment of member or degree of permanent incapacity may be used in this table according to the practice prevailing in the particular State.

TABLE 12.—SEX AND WAGES OF INJURED.

Weekly wages (a).	Total cases.	Males.					Females.				
		Total mals.	Deaths.	Perma- nent total disabil- ities.	Perma- nent par- tial disabil- ities.	Tempo- rary disabil- ities.	Total fe- males.	Deaths.	Perma- nent total disabil- ities.	Perma- nent par- tial disabil- ities.	Tempo- rary disabil- ities.
1	2	3	4	5	6	7	8	9	10	11	12
Under \$4.00											
\$4.00 and under \$5.00											
\$5.00 and under \$6.00											
Etc.											
\$28.00 and under \$29.00											
\$29.00 and under \$30.00											
\$30.00 and over											
Total											

(a) For this table use the calculated wages upon which compensation awards are based, irrespective of maximum or minimum limits.

NOTE.—This table should be made for all industries combined and for important industry schedules. (Average weekly wages for the first and last groups would be useful for actuaries.)

TABLE 13.—SEX AND AGE OF INJURED.

Age.	Total cases.	Males.					Females.					
		Total males.	Deaths.	Per- manent total disa- bil- ities.	Per- man- ent par- tial disa- bil- ities.	Temp- o- rary disa- bil- ities.	Total fe- males.	Deaths.	Per- man- ent total disa- bil- ities.	Per- man- ent par- tial disa- bil- ities.	Temp- o- rary disa- bil- ities.	
		3	4	5	6	7	8	9	10	11	12	
1	2											
Give ages by years, using age at time of accident.												

NOTE.—This table should be made for all industries combined and for important industry schedules.

APPENDIX C.—SCALE OF TIME LOSSES FOR WEIGHTING INDUSTRIAL ACCIDENT DISABILITIES SO AS TO SHOW SEVERITY OF ACCIDENTS.

Nature of injury.	Degree of disability in per cent of permanent total disability.	Days lost.
Death.....	100	6,000
Permanent total disability.....	100	6,000
Arm above elbow, dismemberment.....	75	4,500
Arm at or below, elbow, dismemberment.....	60	3,600
Hand, dismemberment.....	50	3,000
Thumb, any permanent disability of.....	10	600
Any one finger, any permanent disability of.....	5	300
Two fingers, any permanent disability of.....	12½	750
Three fingers, any permanent disability of.....	20	1,200
Four fingers, any permanent disability of.....	30	1,800
Thumb and one finger, any permanent disability of.....	20	1,200
Thumb and two fingers, any permanent disability of.....	25	1,500
Thumb and three fingers, any permanent disability of.....	33½	2,000
Thumb and four fingers, any permanent disability of.....	40	2,400
Leg above knee, dismemberment.....	75	4,500
Leg at or below knee, dismemberment.....	50	3,000
Foot, dismemberment.....	40	2,400
Great toe, or any two or more toes, any permanent disability of.....	5	300
One toe, other than great toe, any permanent disability of.....	0	.....
One eye, loss of sight.....	30	1,800
Both eyes, loss of sight.....	100	6,000
One ear, loss of hearing.....	10	600
Both ears, loss of hearing.....	50	3,000

(1) Injuries not involving amputation should be rated as a proportion of the weight assigned to the entire loss of the member involved, in accordance with the degree of impairment.

(2) The weighting for impairment of function of any member should be such percentage of the weighting for dismemberment as may be determined by the adjudicating authority in fixing the compensation for such impairment—i. e., if loss of an arm is compensated by 240 weeks' indemnity, then an impairment of the arm for which 160 weeks' compensation was paid should rate as two-thirds of the loss of the arm in the above scale.

(3) Hernia should be included only as a temporary disability on the basis of the actual time lost.

(4) For the weighting of temporary disabilities the actual duration of disability in calendar days less one-seventh should be used.

E. H. DOWNEY, *Chairman,*

Special Deputy, Pennsylvania Insurance Department, Harrisburg, Pa.

P. A. BRODERICK,

Assistant Secretary, Massachusetts Industrial Accident Board, Boston, Mass.

W. H. BURHOP,

Member, Compensation Insurance Board of Wisconsin, Madison, Wis.

F. C. CROXTON,

Vice Chairman, Ohio Branch of Council of National Defense, Columbus, Ohio.

T. N. DEAN,

Statistician, Workmen's Compensation Board of Ontario, Toronto, Ontario.

L. W. HATCH,

Chief Statistician, Bureau of Statistics and Information, New York State Industrial Commission, Albany, N. Y.

DON L. LESCOHIER,

Formerly Statistician of the Minnesota Department of Labor and Industries, St. Paul, Minn.

ROYAL MEEKER,

Commissioner of Labor Statistics, Washington, D. C.

CHARLES H. VERRILL,

Chief Statistician, United States Employees' Compensation Commission, Washington, D. C.

E. E. WATSON,

Chief Actuary, Industrial Commission of Ohio, Columbus, Ohio.

NEW WORKMEN'S COMPENSATION LAW OF NEW SOUTH WALES.¹

Under the provisions of the new workmen's compensation act, which went into effect on July 1, 1917, every employer (which term includes the legal personal representatives of a deceased employer) shall make provision for compensating persons injured in his employ. All employees (which term includes, among others, clerks, typists, messengers, domestic servants, and all manual workers) come within the scope of the act, except—

(a) Any person employed whose remuneration exceeds \$1,518 per annum; or

(b) A person whose employment is of a casual nature and who is employed otherwise than for the purposes of the employer's trade or business.

The act covers accidents happening anywhere, whether on or off the employer's premises, provided the person injured was on the business of the employer at the time of the accident.

The compensation provided in case of death by accident or specified diseases is minimum \$1,460 (an increase of approximately \$586 over the old law) and maximum \$2,435 (an increase of approximately \$488 over the old law). In cases of permanent disability by accident or specified diseases the compensation is \$3,650; for temporary total or partial disablement, weekly payments of half the weekly wages, not exceeding \$9.75 per week (\$4.87 under the old law), with a maximum payment of \$3,650 (\$973.30 under the old law).

¹ Data taken from United States Commerce Reports of Aug. 3, 1917, being furnished by Consul General J. I. Brittain, Sydney, New South Wales, under date of July 3, 1917.

INDUSTRIAL ACCIDENTS AND DISEASES.

ACCIDENTS ON STEAM AND ELECTRIC RAILROADS IN THE UNITED STATES IN 1916.

Accident Bulletin No. 62, just issued by the Interstate Commerce Commission, gives a record of collisions, derailments, and other accidents resulting in injury to persons, equipment, or roadbed arising from the operation of railroads in the United States covering October, November, and December, 1916, and the year ending December 31, 1916. In the latter period the total casualties on the steam railroads were 206,723, of which 10,001 were killed and 196,722 were injured; on electric railroads the number killed was 518 and the number injured was 4,606. The statement for steam railroads shows an increase over the preceding year of 1,371 (15.9 per cent) in the number of persons killed and of 34,835 (21.5 per cent) in the number injured. The total number of casualties on steam railroads includes 525 persons killed and 129,740 injured in nontrain accidents; that is, those not occurring directly in connection with the operation of trains, locomotives, and cars on rails.

An analysis of the figures for the year under review, covering steam railroads, shows that of the number killed 2,941 (29.4 per cent) were employees, 291 (2.9 per cent) were passengers and persons carried under contract, and 6,769 (67.7 per cent) were other persons, including both trespassers and nontrespassers, showing an increase over the year ending December 31, 1915, of 710 (31.8 per cent) employees killed, of 85 (41.3 per cent) passengers and persons carried under contract killed, and of 576 (9.3 per cent) "other persons" killed.

For electric railroads, 50 (10.7 per cent) of the 467 persons killed in other than nontrain accidents, were employees, 34 (7.3 per cent) were passengers and persons carried under contract, and 383 (82 per cent) were trespassers and other persons not trespassing.

Of persons injured on steam railroads, 176,923 (89.9 per cent) were employees, 8,008 (4.1 per cent) were passengers and persons carried under contract, and 11,791 (6 per cent) were "other persons." These figures show an increase over the preceding year of 36,666 (26.1 per cent) injuries to employees, and a decrease of 2,106 (20.8 per cent) injuries to passengers and persons carried under contract, and an increase of 275 (2.4 per cent) injuries to "other persons." Of the 3,293 persons injured in other than nontrain accidents on electric railroads, 420 (12.8 per cent) were employees, 1,851 (56.2

per cent) were passengers and persons carried under contract, and 1,022 (31 per cent) were trespassers and other persons not trespassing. The following table shows the casualties on steam and electric railroads for the year ending December 31, 1916:

CASUALTIES TO PERSONS ON STEAM AND ELECTRIC RAILROADS IN THE UNITED STATES FOR THE YEAR ENDING DEC. 31, 1916.

Class.	Passengers and persons carried under contract.		Employees (including employees not on duty).		Other persons (trespassers and nontrespassers).		Total.	
	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.
STEAM RAILROADS.								
Train accidents.....	111	3,651	370	3,822	81	224	562	7,697
Train service accidents.....	180	4,357	2,143	45,299	6,591	9,629	8,914	59,285
Nontrain accidents.....			428	127,802	97	1,938	525	129,740
Total.....	291	8,008	2,941	176,923	6,769	11,791	10,001	196,722
ELECTRIC RAILROADS.								
Train accidents.....	8	706	7	84	1	1	16	791
Train service accidents.....	26	1,145	43	336	382	1,021	451	2,502
Nontrain accidents.....							51	1,313
Total.....	34	1,851	50	420	383	1,022	518	4,606

It may properly be noted that several rules used by the Interstate Commerce Commission in the preparation of its statistics render them incomparable with those of other industries, and for that matter it is impossible to compare successive years with any certainty that the comparison is just. For example (1) the exclusion of deaths which occur more than 24 hours after the accident modifies to an unknown degree the relation of the rates to those of compensation commissions, who consider all cases of fatality which are a result of an accident, even if the death is not immediate; (2) the absence of any determination of the amount of employment leaves the question unsettled whether the increased number of accidents in 1916 represents an actual increase in hazard or may have been accompanied by an actually declining hazard; (3) since industrial boards have adopted the rule that any loss of time beyond the day of the accident renders a case "tabulatable" the exclusion of cases 3 days and under brings about a wide discrepancy between these figures and those of the boards which use "tabulatable" cases.

This lack of comparability between the statistical publications of different official organizations very seriously impairs their value.

SIXTH CONGRESS OF THE NATIONAL SAFETY COUNCIL.

The Sixth Congress of the National Safety Council was held at the Hotel Astor, New York City, during the week beginning September 9. At the same time there was in progress at the Grand

Central Palace, under the joint auspices of the American Museum of Safety and the National Council, an exposition of safety devices and safety methods.

With the steady specialization of the safety movement it has become impossible for a single observer to cover the extensive program of all the sections. The present congress marks the putting into effect of a more carefully considered classification of the council's membership. Five divisions of the council's activities are now recognized, the industrial division, with seven sections; the transportation and public service division, with four sections; the health and industrial relations division; the public administration division; the public safety division.

An outstanding feature of the congress was the marked success of the general sessions. They showed very clearly that even the delegates who represent specialized industries feel the need of, and profit by, discussions of the broad general features of the movement. This was particularly indicated by the large attendance at a session of this kind which occurred at the same time that many of the special sections were holding meetings.

Of the many and important sectional meetings it is only possible to say that the papers presented evidenced a very material advance in directness and pertinence, such as should be expected with the accumulation of concrete experience.

From the standpoint of a statistical organization the program gave interesting evidence of the growing feeling among safety men that some unified method of preparing and presenting their statistical statements is a necessity. The addresses were full of statistical statements for which those using them felt at times obliged to disclaim responsibility because the diversity of method used in their preparation rendered their significance problematical.

In three of the sections, iron and steel, mining, and paper and pulp this subject came up for discussion in connection with papers read. These discussions developed the fact that there is much need of wider knowledge of what has already been done along the line of developing useful methods. The council might render a service by making available to its members the methods already worked out by industrial and statistical bureaus.

The exposition illustrated forcibly the fact that the safety movement has not only influenced established industries in the direction of higher quality and better design in their products, but has created a new industry devoted to discovering and producing special apparatus for the safeguarding of industrial and other operations.

SOCIAL INSURANCE.

SOCIAL INSURANCE COMMISSIONS APPOINTED IN FIVE STATES IN 1917.

The growth of the public interest in the subject of social insurance is especially marked in the very general acceptance of the principle of workmen's compensation for industrial accidents. This is but a single phase of the subject as it has developed in European countries, which, as is well known, were leaders in the matter of workmen's compensation legislation. Other phases of the subject are health insurance, old age, unemployment, disability due to non-industrial accidents, etc. As in the case of workmen's compensation, the first steps taken have been the appointment of investigating commissions. Such commissions have been at work in California and Massachusetts and have made reports, but without the enactment of any law thus far. The commissions in these two States have been continued.

In addition to these the legislatures of five States provided during the current year for various lines of investigation in this field. The States taking such action are Connecticut, Illinois, Ohio, Pennsylvania, and Wisconsin. Of these the Connecticut statute proposes the broadest program, including old-age pensions, health insurance, minimum wage, improvement of conditions in rural districts, free employment bureaus, etc.; the law leaves the methods of investigation entirely to the commission without limitation or direction of any kind. The acts of Illinois and Pennsylvania have a general resemblance in the scope proposed; i. e., to establish a commission to investigate sickness or accidents not compensated by the workmen's compensation act, of employed persons and their families. The Ohio statute announces as the subjects to be investigated, health insurance, sickness prevention, and old-age insurance; while the commission in Wisconsin is instructed to "thoroughly investigate the subject of social insurance," without restriction of the field included under that term.

The compulsory attendance of witnesses and their examination under oath are provided for in Ohio, Pennsylvania, and Wisconsin. In Connecticut and Illinois there is no provision for compulsory attendance or the administration of oaths. In these two States and in Ohio the commissions consist entirely of persons appointed by the governor, while in Pennsylvania three members are designated

by each house of the legislature, three additional members being appointed by the governor; in Wisconsin the work is to be done by a legislative committee.

In no case are the members of the commissions to receive compensation for their services, but they may incur personal expenses, while in Ohio the employment of a salaried secretary is definitely contemplated. In Illinois \$20,000 was appropriated, in Ohio \$25,000, and in Pennsylvania and Wisconsin \$5,000, while in Connecticut expenditures may be made as authorized by the State board of control.

The bureau has been able in a single case to secure the names of the commission. Gov. Cox, of Ohio, on August 28, designated Mr. O. B. Chapman, of Dayton, a member of the Ohio house of representatives and vice president of the Ohio Federation of Labor; Mr. T. J. Donnely, of Columbus, secretary of the Ohio Federation of Labor; Rev. Frank T. Garland, of Dayton, director of public welfare of that city; Mr. M. B. Hammond, of Columbus, professor of economics in the Ohio State University and formerly a member of the State industrial commission; Mr. M. A. Julian, of Cincinnati, manufacturer and banker and president of the associated charities of the city; Mr. Dudley R. Kennedy, of Youngstown, director and counsel of the Youngstown Sheet & Tube Works and in charge of the industrial relations work of that company; and Dr. Frank Warner, of Cleveland, superintendent of the Lakeside Hospital, to serve as the commission of that State. Mr. Julian has been selected as chairman and Prof. Hammond as vice chairman of the commission. The secretary is to be chosen outside the commission, and a corps of trained and experienced investigators will be organized with headquarters in Columbus. The work of investigation is expected to begin early in October.

HOUSING AND WELFARE WORK.

REST AND RECREATION ROOMS AND REST PERIODS FOR EMPLOYEES.

BY ANICE L. WHITNEY.

In the September MONTHLY REVIEW attention was called to a study, conducted by the United States Bureau of Labor Statistics, of the methods followed by employers in promoting the welfare of the employees, and an account was given of the provisions for the medical, surgical, and hospital treatment for employees offered by various establishments.¹ The present article covers in a similar way, and as part of the same study, the provisions made for rest and recreation rooms and for rest periods.

Rest rooms can not be said to be an absolute necessity in any industry, for even the most wearing industries have been carried on from the beginning without such provision. Some of the more enlightened employers, however, are now beginning voluntarily to provide such rooms, among other conveniences, for the comfort, pleasure, and well-being of their employees during the working hours. These employers are discovering that expenditures for such things have turned out to be investments paying high dividends. Rest rooms, which are used for a comparatively short period during the working day, often represent a very material cost to the employer in the amount of floor space devoted to them which otherwise might be given over to the business of the plant, office, or store. The employer is induced to sacrifice such space for a number of reasons aside from a purely altruistic motive. In some instances these reasons are the same as those which prompt employers to maintain lunch rooms. The location of the place of work at a distance from the homes of the workers often makes it impossible for them to return home during the lunch period, or the plant is situated in a part of the city or town where the associations are such that it is desirable to keep the employees protected from them as much as possible. Banks in which large sums of money are necessarily handled by employees, usually require, for the protection of the employees as well as the bank itself, that all employees remain in the building from

¹Medical, surgical, and hospital treatment for employees, by Anice L. Whitney. MONTHLY REVIEW for September, 1917, pp. 59 to 67.

the opening to the closing hour. In such cases, therefore, while rest and recreation rooms are not entirely a necessity, still it is of great advantage to both sides for the employer to provide a pleasant and attractive place in which the workers may spend the noon hour.

The granting of rest periods also is another reason for the maintenance of these rooms. In some instances these periods are of such short duration that the period of relaxation is spent at desks or machines. But in some establishments a long enough rest period is allowed to enable employees to make use of special rest rooms. Such periods of complete relaxation and change from the strain of monotonous and tiresome occupations have usually proven of great advantage to both employees and employers.

There is a great variety in the size and equipment of the rest and recreation rooms provided. These facilities range from small and plainly furnished rooms or a section of the dining room set aside for dancing or other recreation to large and beautifully furnished rooms with special equipment.

The present study covered 431 establishments in a great variety of industries, such as mining, foundries and machine shops, manufacturing of iron and steel, electrical supplies, automobiles, furniture, boots and shoes, textiles, and explosives; also steam and electric railroads, telegraph and telephone companies, electric light and power companies, and stores.

Of the 431 establishments visited, 221, with a total of 725,375 employees, provide a room or rooms for the use of either their male or female employees, or for both, for rest or recreational purposes. Of these 221 establishments, 127, with 346,346 employees, report them to be used by 80,988, or 23 per cent, of their employees. Out of 104 establishments in which the rest or recreation rooms provided could be used by males, 36, with 69,864 employees, report that they are actually used by 14,520, or 21 per cent, of their male employees. Out of 214 establishments in which the rest or recreation rooms provided could be used by females, 116, with 100,484 employees, report that they are actually used by 63,275, or 63 per cent, of the female employees.

In 30 establishments part of the lunch room is set aside as a recreation room, and is either used mainly for dancing or has a section with comfortable chairs, and usually a supply of reading matter. Twenty establishments permit dancing by both male and female employees during the lunch hour, and usually in the lunch room. The music in most cases is furnished by a pianola or victrola, but one company pays an orchestra of its employees to play; another company pays different employees to play the piano, and still another provides music from the outside semiweekly. One establishment has the lunch room space arranged with sliding partitions between the men's and women's lunch rooms and this, together with another sec-

tion containing a stage makes a very large room available for recreation. It is reported by one department store that dancing was prohibited because girls overstayed the lunch period, and also were too tired afterwards to do good work. The latter objection would probably not apply to many other kinds of employment where women are not obliged to stand for a major portion of the day's work.

In general these rooms are provided for the factory as well as the office force, but in two manufacturing establishments, employing 15,335 men, recreation rooms are provided solely for men in the office, and eight such establishments, with 9,537 female employees, furnish such provisions for the office women only. In 13 instances separate rooms are provided for office and factory force but in the majority of cases the same rooms are used by both classes of employees.

There are 69 establishments having a total of 200,607 male employees, which have separate recreation rooms for men, and of these, 31 establishments with 68,015 male employees, report the number using them to be 13,116, or 19 per cent of the male employees. The men's rooms are usually less pretentious than the ones for women. In some cases they are very simply furnished with plain tables and chairs, and in the majority of cases the furnishings are planned with a view to having them practical and substantial rather than ornamental. One company provides two rooms for the men. Smoking is permitted in both, but while games and good natured noise are allowed in one, in the other, which is provided with periodicals and newspapers, quiet is maintained. The same company provides also a separate room for the boys, in which different games, a pool table, a writing desk, and magazines are supplied. All are comfortably furnished and well lighted.

In 23 cases the men's rooms are reported as smoking rooms, but nearly all of these rooms, as well as the remainder of the 69 reported, are equipped with games such as checkers and chess, with cards, although two companies report that no card playing is allowed, often with pool or billiard tables, and with tables with newspapers and periodicals. Several establishments also furnish victrolas or pianos for the pleasure of the men.

From the nature of the industry it is necessary that some waiting place should be provided by electric railroads for the motormen and conductors who are obliged to wait, often for some time, at car barns and terminals for the beginning of their runs. These rooms are usually very comfortably fitted up with easy chairs, games, and reading matter, and often with writing materials as well as gymnasium facilities and shower baths. Of the 15 electric railroads scheduled all but one report such provisions for the men.

One hundred and eighty-one establishments having a total of 151,082 female employees have separate rest and recreation rooms for women, and of these 111 establishments employing 97,363 women report them to be used by 61,340, or 63 per cent of these employees. For the women there are frequently provided both rest and recreation rooms. In industries where large numbers of women are employed, such as the telephone business, large offices, and department stores, there is usually a rest room with couches and easy chairs where the girls are required to be quiet, and, in addition, there is a recreation room often beautifully furnished with flowers, curtains, easy chairs, tables with reading matter, and ordinarily a piano or victrola. These rooms are usually in charge of a matron, and in these industries are open throughout the working hours. In other industries, however, the rooms are frequently kept locked except during the lunch period.

In several instances where only a few girls are employed their recreation rooms are also furnished with gas or electric plates for making tea or coffee, so that those who bring their lunches use these rooms also as lunch rooms.

While the majority of the companies have separate recreation rooms for their male and female employees, still 36 establishments with a total of 57,810 employees provide one recreation room for both sexes, and of these 13 establishments, employing 20,823 persons, report that 8,974, or 43 per cent, of their employees use these rooms.

Roof gardens for the use of employees are provided by 23 companies. The recreational facilities provided here are necessarily more in the line of outdoor sports. One large department store has three tennis courts and two basket-ball courts in wire cages, as well as two running tracks, one very large office building has tennis courts, another has an athletic cage on the roof, and still another in addition to seats and walks has two places screened off for handball, one for men and one for women. Many of the roof gardens are very attractively furnished with plants, easy chairs, hammocks, and swings, and with awnings, so that they are very cool and comfortable places to spend the noon hour in summer. Two department stores have sun parlors, with attractive cretonne-covered wicker furniture, which open on the roof gardens.

It is undoubtedly something of a problem to direct the recreation of large groups of employees, and it is necessary to find recreational facilities which will appeal to the individuals of the groups, for it seems to be true that the average factory workers are content to spend their spare time during working hours in the most idle way possible, and it is necessary to find means to stimulate and arouse their interest and enthusiasm in order that they may be moved to constructive effort along these lines.

Rest periods are granted by 105 companies having a total of 446,122 employees. Of these 105 establishments, 62, with a total of 216,062 employees, report the number to whom they are granted to be 69,073, or 32 per cent of the employees. Fifty-four establishments, having a total of 166,759 male employees, grant them to men, and of these 54 establishments, 31, with 64,025 employees, report that they are given to 19,589, or 31 per cent of their male employees. Eighty-three establishments, with 111,027 female employees, give rest periods to women. Of these 83 establishments, 50, with 56,337 employees, give rest periods to 49,027, or 87 per cent of the female employees.

Except for the telephone industry, where the nervous strain of the work is very great, and where it is the uniform practice for this reason to provide relief periods usually of 15 minutes' duration twice during the working period, and in the iron and steel industry and in foundries on the very hot work, these rest periods are not peculiar to any particular industry, but are granted usually to such groups of employees as are engaged in especially monotonous or fatiguing occupations.

It is quite usual to give office girls who are in the dictaphone and stenography and typewriting divisions rest periods of 10 or 15 minutes, and in 22 department stores out of the 46 reporting on this topic rest periods of from 5 to 20 minutes are given twice daily, generally to the majority of the employees. Elevator men are given relief periods at frequent intervals, sometimes 10 minutes being given for each hour's work. It is rather uncommon to find that rest periods are granted in the textile industry since, in the women's occupations especially, the greater part of the work is of such a nature that there are frequent opportunities to rest while at the machines.

In one factory making fine machines and employing about 2,000 persons the power is shut off for 10 minutes twice daily so that employees are obliged to relax even though they might prefer to remain at work. Another factory employing many women reports that this was tried, but because of the work being piecework the rest periods were not popular with the majority and so were abandoned. In one soap factory all those working at the wrapping machines have 15 minutes for rest twice during the day, and in a large food factory all the women have rest periods of 15 minutes twice daily except bundlers, who have half an hour. Another food factory gives 15 minutes to those employees who work at machines, and a leather factory gives 8 minutes to all employees except those in the office.

Two establishments report calisthenics during the rest period, and it is the experience of one of these firms that while the employees at first took up the exercises very reluctantly they soon entered into them with great enthusiasm, owing to the good effects which resulted.

Rest is provided for through change of occupation in 11 cases. There is no one industry which stands out above another in this respect, but it is in such monotonous work as packing, box folding, operating closing machines for paper boxes, weighing and wrapping tobacco, and similar work that such relief is afforded. This is sometimes accomplished by a complete change of occupation and sometimes those who stand change with those who are sitting and who are engaged in parts of the same operation.

It may be said that the general results of the provision of rest and recreation facilities for employees are increased efficiency and better health and spirits through the relaxation found in the change of interests during the working day and the general good feeling which is engendered through group activities and which follows when individuals who work together learn also to play together.

HOUSING PLANS IN THE UNITED KINGDOM.¹

One of the most important questions in Great Britain for several years past, and one which has assumed political prominence at many electoral campaigns, is that of the housing of the working classes. This subject is now being taken in hand by a departmental committee appointed by the Government, while the Local Government Board has requested town and urban authorities throughout the country to report, not later than a date in October, the housing requirements of the people in their towns and districts.

It is admitted by the board that 500,000 houses are now urgently wanted, but other authorities, including the joint committee on labor problems after the war, estimate that not less than 1,000,000 houses are necessary, costing \$1,216,625,000.

On the question of finance, Government aid has been promised, although no stated amount has been named pending the report of the newly appointed committee. In the meantime a grant of \$97,330,000 has been asked for by some housing organizations.

The Government in November, 1914, decided in favor of a free grant from the exchequer, as well as loans, to permit of local councils charging customary rents without incurring loss; and while that policy is still in force it has, so far, only affected certain munition areas.

It is recognized that overcrowding has been one of the causes of industrial unrest, especially in districts where war work is particularly heavy; and that bad housing has led to high infantile mortality, notably in the northern industrial centers. In three Scottish districts there is immediate urgent need for accommodation for 100,000 workers.

¹ From report of United States consul in London to State Department, Aug. 11, 1917.

Since 1906 there has been a decrease in the building of houses for the working classes. With the outbreak of war practically a complete cessation of small house building set in, except in munition areas.

The committee's tasks will include the working out of the best scheme by which large numbers of skilled laborers in the building trade can be secured after the war ends; the provision of 120,000 cottages for workers on the land; the supply of adequate accommodation for workers in new industrial districts which will be opened up; the method of applying the policy of grants in aid; the consideration of evidence respecting particular areas where especially prompt measures are necessary; amendment of by-laws relating to construction; and types of buildings in urban and rural districts.

In regard to the last-named point, it is hoped to avoid monotony in design, and in this regard it is reported that numerous designs and plans already exist of small houses combining the utmost utility with good appearance.

It is reported as certain that at an early date Government approval will have been granted to plans involving the erection of not less than half a million houses within the first two years after the conclusion of the war, and that, in order to prevent rents being higher than in pre-war times, financial assistance will be substantially provided.

DWELLINGS AT MODERATE COST IN DUNDEE, SCOTLAND.

According to advices received from Consul H. A. Johnson at Dundee, Scotland, under date of July 30, 1917, and published in the United States Commerce Reports of August 22, the Dundee labor housing council has submitted to the town council plans for workmen's dwellings that can be rented at moderate rates. It appears that the labor council scheme is based on the assumption that the Government will give definite grants, whereas the town council committee assumes that the Government will give the difference between pre-war and postwar costs of labor and material. Account is also taken in the labor council scheme of the possibility that houses may be built either of stone from the houses to be demolished or from new stone. The rents, it is stated, include rates and taxes as is also provided in a scheme proposed by the committee of the town council.

According to the consul's report, the plans provide for three classes of houses, all erected in blocks of two stories. Class A contains parlor, living room, scullery, and washhouse downstairs, and a large bedroom and two smaller bedrooms and bathroom upstairs. With a Government grant in aid of 25 per cent of the cost, and the

use of old stone, the rent will be \$121.66 per annum, or \$2.34 a week; with the same grant and new stone, \$153.29 a year, or \$2.92 a week; with a Government grant of 33 $\frac{1}{3}$ and old stone, \$109.49 a year, or \$2.10 a week; with the same grant and new stone, \$136.01 a year, or \$2.61 a week; with a Government grant of cost free of interest, to be repaid in 60 years, and old stone, \$54.74 a year, or \$1.09 a week; and the same conditions and new stone, \$68.13 per annum, or \$1.29 a week.

The B scheme also is based on the two-flat system and contains living room and kitchen scullery downstairs and two bedrooms upstairs. The bathroom is in an annex at the back, and there is also a pantry and napery press. If the houses are built of old stone and the money granted free of interest, the rent will be \$0.77 per week, and \$2.12 with a grant in aid of 25 per cent and new stone used. The rent will vary between these extremes, according to the conditions and amount of the grant and the nature of the material used.

In C scheme an effort has been made to combine three-room and one-room dwellings in the same block. The larger dwelling consists of living room, parlor, bedroom, pantry, washhouse, scullery, and lavatory. There will be a bathroom for every two dwellings. The rent of the larger dwelling varies from \$0.73 per week to \$1.94, according to the Government terms and the material used; and of the smaller from \$0.48 to \$1.50.

HOUSING IN THE CITIES OF DENMARK.

Under the direction of the Danish statistical department an investigation of housing in 74 cities was made as of date February 1, 1916, a report of which, not including Copenhagen and suburbs, has recently come to hand.¹ In this investigation, which followed the general plan adopted in a similar inquiry in 1911, only apartments wholly or partially used as dwellings were considered, and the data presented relates to number of rooms, monthly rent paid, ownership, whether rented or for rent, and the number of persons living in each dwelling.

The population of the 74 cities on February 1, 1916, was 604,203, living in 156,178 apartments. Of these apartments, 138,946 were used exclusively as dwellings and 17,232 were used as dwellings in connection with stores, offices, etc. The average number of persons living in a dwelling was 3.87, as compared with 4 in 1911.

In counting the number of rooms in a dwelling the servant's room was included but the kitchen was not. It was found that the number

¹ Statistiske Meddelelser. 4 Raekke, 52 Bind., 2 Haeftte, Heselejen i Provinsbyerne. Copenhagen, 1917.

of apartments having two or three rooms formed 70.1 per cent of the 138,946 apartments used solely as dwellings as compared with 68 per cent of those so used in 1911. The report includes a table showing the per cent of these apartments having each specified number of rooms in 1916 as compared with 1911. This table shows an increase in the proportion of apartments having two and three rooms.

In 10 cities having a population of over 15,000, 48.1 per cent of the dwellings had one or two rooms each, while in 31 cities having a population of 4,000 to 15,000, and in 33 cities having a population less than 4,000, the per cents were 43.2 and 31.8, respectively. In these groups of cities the percentage of homes owned was 18, 31.7, and 51.5, respectively, while in all cities covered 27.7 per cent of the homes were owned.

The proportion of vacant apartments varied considerably in the different cities. The class most frequently reported vacant were those of one or two rooms. For all cities combined the number of vacant apartments formed 2.7 per cent of all apartments considered. Of the 8,276 apartments having 1 room only, 8.6 per cent were vacant, and of 52,850 having two rooms 3.1 per cent were vacant. The report says: "One is of the opinion that these smaller houses are for some reason unsuitable for habitation."

The following table shows the number of dwellings occupied by owners, and by renters, and the number vacant, classified by number of rooms:

NUMBER OF APARTMENTS OF EACH SPECIFIED NUMBER OF ROOMS OCCUPIED BY LESSORS, BY OWNERS, AND THE NUMBER VACANT IN 74 CITIES IN 1916.

Number of rooms.	Number of apartments—					Number of rooms.	Number of apartments—				
	Rent-ed.	Occupied by the owner.		Va-cant.	Total.		Rent-ed.	Occupied by the owner.		Va-cant.	Total.
		Num-ber.	Per cent.					Num-ber.	Per cent.		
1.....	6,897	666	8.0	713	8,276	6.....	2,034	1,898	47.3	75	4,007
2.....	43,265	7,939	15.0	1,646	52,850	7.....	1,060	1,295	54.1	40	2,395
3.....	29,012	14,776	33.1	849	44,637	8 or more.....	1,231	1,781	58.2	48	3,060
4.....	9,282	6,837	41.6	302	16,421	Total.....	96,603	38,537	27.7	3,806	138,946
5.....	3,822	3,345	45.8	133	7,300						

Rents compared with 1911 have advanced materially when considered as a whole, but the rate of increase varies with the different classes of apartments. In general, there was no increase for one-room dwellings, while for those of two or three rooms the advance was nearly 10 per cent, and for all dwellings considered the rent increased 8.7 per cent during the five-year period from 1911 to 1916.

CHILD LABOR AND CHILD CARE.

CHILDREN IN WAR TIME: BABIES AND WAR.

In a paper on infant welfare work in war time, by Dr. Grace L. Meigs, of the Children's Bureau of the United States Department of Labor, which the bureau has just made available for general distribution, an account is given of the work which has lowered the infant death rate in Great Britain, France, Belgium, and Germany.

The special features of the work have varied in the different countries. In England there has been a striking increase in the number of health visitors employed to help and to instruct mothers in the care of their babies and young children. An act providing for Government aid to local agencies had, as it happened, been passed in July, 1914.

The Local Government Board (the central supervising and administrative body) has taken the stand that in war time, in spite of the general need for economy, no economy should be exercised in this direction. There is evidence that in a good many communities, on account of lack of money and private support, the authorities or voluntary agencies have been slow to increase their work or to undertake new work. These difficulties the Local Government Board has largely overcome. It has gone on with the greatest determination toward its acknowledged goal—to have systematic supervision through the work of health visitors for all babies born who need care.

The available information for Germany concerns only the first 18 months of the war. Dr. Meigs refers to the emphasis placed on enabling mothers to care for their own children. A special committee of the Red Cross, for example, was organized in Berlin for the care of mothers and infants. The committee had a fund for needy mothers which it used for those mothers who brought their babies regularly to an infant-welfare station and who took care of them in their own homes.

The outstanding feature of the work in Paris seems to be the increased provision for maternity care; and in Belgium, the establishment of canteens for the feeding of mothers and of young children.

Dr. Meigs speaks of the important part played by the military separation allowances which are granted by foreign Governments to the wives of enlisted men, either, as in Great Britain and Canada, to the wives of all soldiers or, as in France and Germany, to the wives who are in need because the family's wage earner has been called to the colors.

Furthermore, in each of these countries except Belgium a maternity benefit from Government funds, provided before the war to

certain mothers, has now been extended to include either the wives of all enlisted men or all women who are receiving the military separation allowance.

On the experience of these countries Dr. Meigs bases the following war-time suggestions for the United States:

The chief preventive measure for protecting babies is to insure their intelligent care and nursing by healthy mothers in their own homes.

Nothing should be considered more important in war time than the strengthening and extending of preventive work already established for infant and maternal welfare. The disorganization of such work through the loss of physicians and nurses especially trained for it should be avoided if possible.

Every effort should be made to enlist a large number of candidates for hospital-training courses.

WHY BOYS LEAVE SCHOOL.

The engineering extension department of the Iowa State College of Agriculture and Mechanic Arts, Ames, Iowa, issued on August 15, 1917, a bulletin giving the result of a partial survey of the public schools of Fort Dodge, Iowa.¹ This survey was made by Edw. T. Snively, supervisor of manual training in the schools of that city, for the purpose of determining "the chief reasons why so many boys leave the schools of our city before completing the course; in what grades the greatest number of boys drop out; what they do after leaving school; what their earning capacity is; and what readjustments should be made in our present courses of study to make them meet even more fully than they are now doing the needs of our boys and of the community." The boys enrolled in the sixth and seventh grades during the fall of 1909 were selected as typical groups, since those remaining in school from these grades would at the time of the survey (February, 1916) be enrolled in the high school or would have graduated in the preceding June. Moreover, by 1916, the boys who dropped out of the schools in 1909 and 1910 would have had a fair number of years in which to show what they could do in the business world with their limited preparation.

The two groups studied included 138 boys—63 enrolled in the seventh grades and 75 enrolled in the sixth grades in September, 1909, and information was obtained by means of school records on file in the superintendent's office, conferences with pupils, parents and employers of pupils, and letters from pupils and parents.

Tables are presented showing that of those enrolled 71.4 per cent in the seventh grade and 66.7 per cent in the sixth grade left school before completing the full 12 grades. The average age of those in

¹ Official publication of the Iowa State College of Agricultural and Mechanic Arts, Aug. 15, 1917. Bulletin 32, Engineering Extension Department. The boy and the school, a partial survey of the public schools of Fort Dodge, Iowa. Ames, Iowa, 1917. 19 pp.

the seventh grade who dropped out was found to be 14 years, as compared with an average age of 12 years for those who remained in school, and of those in the sixth grade the corresponding average ages were 13 and 11, respectively. The conclusion drawn from these figures is that the boys who are well up in their school work for their ages are those who remain at school and the boys who are somewhat behind their classmates drop out either from discouragement or lack of interest. "The brighter the boy the greater is the probability that he will remain in school."

Two tables show the relative earning capacity of the boys in each group. Those who dropped out at the seventh grade earned an average wage of \$28.88 per month during the first year and \$41.38 during the sixth year at work, while those who remained through the eleventh grade earned an average of \$49 per month during the first year and \$60 during the second year at work. Those who dropped out in the sixth grade earned an average of \$22.20 per month during the first year and \$42 during the sixth year at work, while those in this group who remained through the tenth grade earned an average of \$37.50 during the first year and \$59.20 during the third year. These figures would seem to indicate that boys who remain in school have a better chance in the business world than those who drop out, although it is admitted that native capacity may be largely responsible for the differences cited above.

As to reasons for leaving school, the report emphasizes the finding that in each group lack of interest was responsible for the largest number dropping out. Approximately 24 per cent of those in the first group and 32 per cent of those in the second group reported this as their reason for leaving school.

This brings the author to the conclusion that vocational or industrial training in the schools through prevocational classes and the junior high school are essential to create interest and thus hold boys in school for a longer period in order to give them definite preparation for useful work. As already indicated, one of the most important facts demonstrated by the survey was that added years in school increase greatly a boy's chance of success in the financial world as well as other fields of endeavor, and to this end the courses of study, it is urged, should be planned so as to equip them to decide upon occupations in which there is opportunity for advancement and render them capable of meriting promotion.

To meet the local situation the supervisor of manual training recommends prevocational work in the grades and continued vocational work in the high school; that the time devoted to manual training in the grades be extended to two hours a week and that mechanical drawing be given as part of the course; that from the seventh and eighth grades a special class be organized for those pupils who are

not likely to enter high school, and that from one-third to one-half of their time be devoted to prevocational work. The establishment of a junior high school is deemed advisable. The cooperation of the entire community is felt to be essential if the boys are to be kept in school, and a vocational guidance bureau composed of various employers and representatives of the schools is recommended. This bureau, it is stated, would accomplish three things: (1) Help worthy pupils to secure employment; (2) help employers to secure efficient labor; and (3) add impetus to school work because pupils would have new reasons for wishing to excel.

APPRENTICESHIP IN WISCONSIN.

The Industrial Commission of Wisconsin has issued a report¹ on the apprenticeship system of the State under the law of 1915 which requires minors learning a trade to be under legal contract and imposes upon the industrial commission the supervision of such contract. The law provides that any minor 16 years of age or over may, by the execution of an indenture, bind himself for a term of service of not less than one year; that until he is 18 years of age he shall receive instruction in school for not less than five hours a week, the total number of hours of service and instruction not exceeding 55 a week; that the employer shall pay for the time spent in receiving instruction at the same rate as is paid for service, attendance at school being certified by the teacher and penalties imposed upon the apprentice for absence without good cause; and that an indenture may be annulled by the industrial commission upon the application with good cause of either party, but failure of either party to perform the stipulations of an existing contract shall render him liable to a fine.

The law requires that the apprenticeship contract shall be executed in triplicate, the copies being retained by the employer, the apprentice, and the industrial commission. Records of apprentices are kept in the Milwaukee office of the commission and opportunity is given the boys to come there if they are in difficulty. The contract form used by the commission is as follows:

INDUSTRIAL COMMISSION OF WISCONSIN.

APPRENTICE INDENTURE.

THIS INDENTURE, Made in triplicate this — day of —, 19—, between —, hereafter called the first party, and —, a minor, born —, of —, Wisconsin, and —, hereafter called the second parties:

(Date of birth.) (Street and number.)

(Name of parent or guardian.)

¹ Industrial Commission of Wisconsin. Apprenticeship: first report, year ending Dec. 31, 1916. Madison, 1917. 14 pp.

WITNESSETH, That the first party agrees to take the said minor into its employ and service as an apprentice to teach him the trade of ——— as per Exhibit A.

That the second parties agree that the said minor shall diligently and faithfully work for and serve the said first party during the full term of apprenticeship.

The apprenticeship shall begin on the — day of ———, 19—, and shall be for a period of ——— years. The length of year, the compensation for the term of apprenticeship, and the processes, methods or plans to be taught shall be as per Exhibit A.

It is mutually agreed that until the minor's eighteenth birthday the total number of hours' work in any one week shall not exceed fifty-five (55), and that at least five (5) of such hours or its equivalent¹ shall be devoted by said minor to school instruction.

(This clause shall not be construed to prevent school instruction after the minor's eighteenth birthday if both parties agree to the continuation of the same.)

Any indenture may be annulled by the Industrial Commission of Wisconsin upon application of either party and good cause shown.

At the completion of the apprenticeship the said minor shall receive a certificate stating the terms of his indenture.

IN WITNESS WHEREOF, The parties have caused this indenture to be signed as required by Chapter 133 of the Laws of Wisconsin, 1915.

(Apprentice.)	[SEAL.]	(Name of firm and corporation.)
(Parent or guardian.)	[SEAL.]	By _____

EXHIBIT A.

NOTICE.—No apprenticeship indenture will be legal which does not have this exhibit filled out as indicated below. (Ch. 133, Laws of Wisconsin, 1915.)

Extent of period of Apprenticeship.

(Here must be stated the length of time to be served, and, wherever the trade can determine, the exact length of each apprenticeship year.)

Schedule of processes to be worked.

(Here must be stated the processes, methods or plans to be taught and the approximate time to be spent at each process, method or plan—to conform to the character of the individual trade.)

Compensation to be paid.

The apprentice shall receive in wages:——.

Special provisions.

(These to be stated here or on following page.)

A copy of the law upon which the contract is based is attached to each indenture.

The following account of the commission's experience and methods in administering the apprenticeship law is quoted from the report:

The industrial commission has sought in its apprenticeship work to carry out the same policy which has characterized its other activities—that of cooperation with joint committees of employers and employees. Accordingly on November

¹ To meet the peculiar requirements of certain trades special arrangements for schooling may be made through the Industrial Commission of Wisconsin.

7, 1915, a State committee representing the interests of the employers, the employees, and the continuation schools, was called together in Milwaukee. From this committee was created a State apprenticeship board to consider some of the important details of administration, and to advise the supervisor of apprenticeship. * * *

The first thing done by the board was to work out a uniform indenture blank that could be used for all trades, and for all kinds of apprenticeships. This blank has been in use since January 20, 1916.

The next problem was to form standards for apprenticeship in different trades and industries. These have been determined by calling together in each trade those who best represent it. In these conferences the whole matter of apprenticeship has been thoroughly discussed, and ample opportunity given every one to offer criticisms and suggestions, until finally the best composite ideas were adopted. Experience has fully demonstrated that no trade schedule can be enforced that is not well considered from both sides, and mutual support given. Committees have been formed for the metal trades, barbers, bricklayers, engravers, plasterers, printers, painters and decorators, and tailors. Definite schedules have been determined for the following trades: Automobile machinists, barbers, blacksmiths, boiler makers, bricklayers, electricians, engravers, lithographers, machinists, molders, pattern makers, plasterers, printers, toolmakers, and wireworkers.

Rules governing these schedules are established by the commission after having been agreed upon by the trade committees and considered by the apprenticeship board.

A form of diploma to give to graduating apprentices has been determined upon and issued. This will certainly be an incentive to the boys to do their best and to stick to their jobs until their apprenticeship is finished, and it will also prove an influence in raising the standard of proficiency among mechanics.

There have been five main avenues of approach for apprenticeship education, so far as creating a demand for it is concerned, namely, through (1) trade-union committees, (2) employers' associations, (3) trade committee meetings, (4) school conferences and teachers' meetings, and (5) personal conferences with manufacturers.

During 1916 there was in operation for the first time a satisfactory method of keeping track of the indentured boys and compiling data of apprenticeship. The number of new contracts entered into in 1916 was 468, exceeding by 80 per cent the highest number reached in the preceding four years. The 969 contracts in existence January 1, 1917, were distributed among the trades as follows: Machinist, 566; pattern maker, 121; bricklayer, 55; compositor, 49, toolmaker, 33; molder, 28; electrician, 24; boiler maker, 17; engraver, 13; blacksmith, 12; lithographer, 10; plasterer and wire weaver, 8 each; painter, 6; plumber, 4; carpenter, cigar maker, and draftsman, 3 each; cabinetmaker and tinsmith, 2 each; and brewer and shoe repairer, 1 each; total, 969.

It will be observed that by far the greater number of contracts now in force are in the machinist trade. It appears also that some trades in which a large number of apprentices might be expected are not yet working under the new system. One of these is the plumbing trade,

where apprenticeship conditions are said to have been peculiar but where work is now being done to standardize conditions and get the apprentices operating under legal contracts.

According to the report the most successful apprenticeships are those which begin with the boy 16 or 17 years of age rather than 18 or more. Of the contracts in force January 1, 1917, 34.8 per cent were entered into by boys 16 years of age and 29.7 per cent by boys 17 years of age. There is a tendency under the new law to secure boys at a lower age than under the law of 1911.

Most apprentices begin at a wage rate of 12 cents an hour, this being increased every six months up to 20 cents or more, received during the last period of apprenticeship. The rates vary among the trades, being highest in building. The apprentices receiving weekly wages are relatively few, and are mainly in the printing trades.

Many employers complain that apprentices can not be had who "stick." It is true that some boys break their contracts, the lure of higher wages as unskilled helpers being too strong for them to resist, but the number of these is relatively smaller than it used to be. Apprenticeship has not been sufficiently dignified. With more supervision on the part of the State, such as that by an assistant recently appointed to look after the boys in the metal trades; with the increase of schooling facilities; and with more attention paid to graduation and promotion, the "jumping" of contracts will be reduced to a minimum.

The problem which the apprenticeship law of 1915 was designed to solve is summarized as follows:

The problem of apprenticeship grows out of the crying need for better mechanics. The value of our citizenship is enhanced by the training, discipline, and intelligence of the young workers, and this will be the surest basis of industrial peace. We can no longer depend upon Europe for our skill, and even if we could, there is the obligation to train the youth of our own country. The problem of apprenticeship involves four elements, namely, (1) the desire on the part of the employers to take apprentices, (2) the attitude of the parents to their boys learning a trade, (3) the desire on the part of boys to learn a trade, and (4) a willingness on the part of workmen to impart to the apprentices the knowledge they have of the trade. The whole problem, then, is one of adjusting human relations, and at this stage is largely a matter of dealing with attitudes of mind; and, therefore, differs in every essential from the work involving technical inspection. Bringing about the right attitude of mind of each of these elements is, in the last analysis, the most important work that can be done. To accomplish the results desired, and to get the right cooperation among the interested parties, it is necessary to pursue a policy of education and instruction, and incidentally to have a sympathetic understanding of trade conditions. This has been the aim of the industrial commission in performing its duties under the apprenticeship law.

LABOR LAWS.

LABOR PROVISIONS OF THE MEXICAN CONSTITUTION OF 1917.

The United States of Mexico adopted a constitution in the year 1857 which continued in force until superseded by a new constitution promulgated February 5, 1917. The new constitution contains a number of provisions of importance to labor, some of them being in advance of the generally accepted legal regulations of this country.

Exploitation of the working classes and their subjection to the holders of large properties, which continued to flourish under the constitution of 1857, were some of the evils that were especially sought to be remedied in the new instrument. Many of the provisions of the old constitution have been taken over into the new, but the corrective effect of new features gives to these an aspect different from that which they previously had. Thus the prohibition of slavery, which appears in both the old and the new documents, acquires a new significance in view of the provision of the new constitution that no contract for labor shall be binding except for the time fixed by law, and shall not "exceed one year to the prejudice of the party rendering the service, nor shall it in any case whatsoever embrace the waiver, loss, or abridgement of any political or civil right." In case of breach no compulsory fulfillment may be had, the workman being liable civilly for resultant damages.

Freedom to engage in any pursuit or occupation is guaranteed by both constitutions, the present one inserting the proviso that it must be lawful, and that no one shall be deprived of the fruit of his labor except by judicial decree. Orders for arrest or detention may be issued only by competent judicial authority, preceded by a charge, accusation, or complaint for the specific offense punishable by imprisonment, supported by an affidavit of a reliable party or by such other evidence as shall make the guilt of the accused probable. No one may take the law into his own hands, and the detention of persons shall be exercised only for offenses meriting corporal punishment. Punishment of violations of municipal and police regulations may consist only of fines or imprisonment not exceeding 36 hours; and fines against a workman or unskilled laborer may not be greater than the amount of his weekly wage or salary. Imprisonment for nonpayment of such fine may in no case exceed 15 days. Speedy trials must be had, and the period of detention before trial

may not exceed the time set by law as the maximum period of imprisonment for the offense charged; the period of detention shall in all cases be considered a part of the final sentence.

The ownership of lands and water is declared to be vested originally in the nation, which has the right to transmit title and to impose such limitations as the public interest may demand, both in the regulation of the development of natural resources and in the division of large landed estates for the purpose of developing small holdings, establishing new centers of rural population, encouraging agriculture, etc. Legal capacity to acquire ownership of lands and properties is possessed only by Mexicans, native or naturalized, and by Mexican companies, and these alone may obtain concessions to develop mines, water, or mineral fuels within the Republic. Foreigners may be granted the same right if they agree to be considered as Mexicans in respect to such property and not invoke the protection of their governments in regard thereto. However, no foreigner may obtain direct ownership of lands or waters under any conditions within a zone of 100 kilometers (62 miles) from the frontiers and of 50 kilometers (31 miles) from the seacoast.

In each State and Territory there shall be fixed a maximum area of land that any one individual or corporation may own. Excess property, if not voluntarily subdivided, may be subdivided by the local government by means of expropriation proceedings. Persons acquiring such subdivided lands have 20 years in which to make payment, the rate of interest not to exceed 5 per cent. The buyer may not alienate his lands during that period.

The prohibition as to private and governmental monopolies found in the old constitution is reproduced in the new, with added provisions as to punishment for accumulating or cornering necessities for the purpose of bringing about a rise of price. Acts or measures which stifle or endeavor to stifle free competition in any production, industry, trade, or public service are forbidden; as are also agreements or combinations by producers, manufacturers, merchants, common carriers, and the like for the purpose of preventing competition and compelling the payment of exorbitant prices. Associations of labor organized to protect their own interests are not to be deemed a monopoly, nor are cooperative associations or unions of producers when, in defense of their own interests or those of the general public, they sell prime local products directly in foreign markets. Such associations must, however, be under the supervision of the Government, Federal or State, and have special authorization in each case.

It is declared to be the duty of every Mexican to compel the attendance of his children or wards under 15 years of age at either private or public schools, in order that they may receive primary instruction and military training for such periods as the State laws

determine. The Federal Congress has power to establish vocational or agricultural and trade schools, though these powers are declared not to pertain exclusively to the Federal Government.

The sixth title of the constitution of 1917 is devoted to the subject of labor and social welfare and is entirely new. It is reproduced in full, as follows:

TITLE VI.

OF LABOR AND SOCIAL WELFARE.

ART. 123. The Congress and the State legislatures shall make laws relative to labor with due regard for the needs of each region of the Republic, and in conformity with the following principles, and these principles and laws shall govern the labor of skilled and unskilled workmen, employees, domestic servants and artisans, and in general every contract of labor.

I. Eight hours shall be the maximum limit of a day's work.

II. The maximum limit of nightwork shall be seven hours. Unhealthy and dangerous occupations are forbidden to all women and to children under sixteen years of age. Nightwork in factories is likewise forbidden to women, and to children under sixteen years of age; nor shall they be employed in commercial establishments after ten o'clock at night.

III. The maximum limit of a day's work for children over twelve and under sixteen years of age shall be six hours. The work of children under twelve years of age can not be made the object of a contract.

IV. Every workman shall enjoy at least one day's rest for every six days' work.

V. Women shall not perform any physical work requiring considerable physical effort during the three months immediately preceding parturition; during the month following parturition they shall necessarily enjoy a period of rest and shall receive their salaries or wages in full and retain their employment and the rights they may have acquired under their contracts. During the period of lactation they shall enjoy two extra daily periods of rest or one-half hour each in order to nurse their children.

VI. The minimum wage to be received by a workman shall be that considered sufficient, according to the conditions prevailing in the respective region of the country, to satisfy the normal needs of the life of the workman, his education and his lawful pleasures, considering him as the head of a family. In all agricultural, commercial, manufacturing, or mining enterprises the workmen shall have the right to participate in the profits in the manner fixed in Clause IX of this article.

VII. The same compensation shall be paid for the same work without regard to sex or nationality.

VIII. The minimum wage shall be exempt from attachment, set-off, or discount.

IX. The determination of the minimum wage and of the rate of profit sharing described in Clause VI shall be made by special commissions to be appointed in each municipality and to be subordinated to the central board of conciliation to be established in each State.

X. All wages shall be paid in legal currency and shall not be paid in merchandise, orders, counters, or any other representative token with which it is sought to substitute money.

XI. When owing to special circumstances it becomes necessary to increase the working hours there shall be paid as wages for the overtime one hundred per cent more than those fixed for regular time. In no case shall the overtime exceed three hours nor continue for more than three consecutive days; and no women of whatever age nor boys under sixteen years of age may engage in overtime work.

XII. In every agricultural, industrial, mining, or similar class of work employers are bound to furnish their workmen comfortable and sanitary dwelling places for which they may charge rents not exceeding one-half of one per cent per month of the assessed value of the properties. They shall likewise establish schools, dispensaries, and other services necessary to the

community. If the factories are located within inhabited places and more than one hundred persons are employed therein, the first of the above-mentioned conditions shall be complied with.

XIII. Furthermore, there shall be set aside in these labor centers, whenever their population exceeds two hundred inhabitants, a space of land not less than five thousand square meters for the establishment of public markets, and the construction of buildings designed for municipal services and places of amusement. No saloons nor gambling houses shall be permitted in such labor centers.

XIV. Employers shall be liable for labor accidents and occupational diseases arising from work; therefore, employers shall pay the proper indemnity, according to whether death or merely temporary or permanent disability has ensued, in accordance with the provisions of law. This liability shall remain in force even though the employer contract for the work through an agent.

XV. Employers shall be bound to observe in the installation of their establishments all the provisions of law regarding hygiene and sanitation and to adopt adequate measures to prevent accidents due to the use of machinery, tools, and working materials, as well as to organize work in such a manner as to assure the greatest guaranties possible for the health and lives of workmen compatible with the nature of the work, under penalties which the law shall determine.

XVI. Workmen and employers shall have the right to unite for the defense of their respective interests, by forming syndicates, unions, etc.

XVII. The law shall recognize the right of workmen and employers to strike and to suspend work.

XVIII. Strikes shall be lawful when by the employment of peaceful means they shall aim to bring about a balance between the various factors of production, and to harmonize the rights of capital and labor. In public services, the workmen shall be obliged to give notice ten days in advance to the board of conciliation and arbitration of the date set for the suspension of work. Strikes shall be considered unlawful only when the majority of the strikers shall resort to acts of violence against persons or property, or in case of war when the strikers belong to establishments and services dependent on the Government. Employees of military manufacturing establishments of the Federal Government shall not be included in the provisions of this clause inasmuch as they are a dependency of the National Army.

XIX. Lockouts shall only be lawful when the excess of production shall render it necessary to shut down in order to maintain prices reasonably above the cost of production, subject to the approval of the board of conciliation and arbitration.

XX. Differences or disputes between capital and labor shall be submitted for settlement to a board of conciliation and arbitration to consist of an equal number of representatives of the workmen and of the employers and of one representative of the Government.

XXI. If the employer shall refuse to submit his differences to arbitration or to accept the award rendered by the board the labor contract shall be considered as terminated, and the employer shall be bound to indemnify the workman by the payment to him of three months' wages, in addition to the liability which he may have incurred by reason of the dispute. If the workman reject the award the contract will be held to have terminated.

XXII. An employer who discharges a workman without proper cause or for having joined a union or syndicate or for having taken part in a lawful strike shall be bound, at the option of the workman, either to perform the contract or to indemnify him by the payment of three months' wages. He shall incur the same liability if the workman shall leave his service on account of the lack of good faith on the part of the employer or of maltreatment either as to his own person or that of his wife, parents, children, or brothers or sisters. The employer can not evade this liability when the maltreatment is inflicted by subordinates or agents acting with his consent or knowledge.

XXIII. Claims of workmen for salaries or wages which have accrued during the past year and other indemnity claims shall be preferred over any other claims in cases of bankruptcy or execution proceedings.

XXIV. Debts contracted by workmen in favor of their employers or their employers' associates, subordinates, or agents, may be charged only against the workmen themselves and in no case and for no reason collected from the members of his family. Nor shall such debts be paid by the taking of more than the entire wages of the workman for any one month.

XXV. No fee shall be charged for finding work for workmen by municipal offices, employment bureaus, or other public or private agencies.

XXVI. Every contract between a Mexican citizen and a foreign principal shall be legalized before the competent municipal authority and viséed by the consul of the nation to which the workman is undertaking to go, on the understanding that in addition to the usual clauses special and clear provisions shall be inserted for the payment by the foreign principal making the contract of the cost to the laborer of repatriation.

XXVII. The following stipulations shall be null and void and shall not bind the contracting parties, even though embodied in the contract:

(a) Stipulations providing for inhuman day's work on account of its notorious excessiveness, in view of the nature of the work.

(b) Stipulations providing for a wage rate which in the judgment of the board of conciliation and arbitration is not remunerative.

(c) Stipulations providing for a term of more than one week before the payment of wages.

(d) Stipulations providing for the assigning of places of amusement, eating places, cafés, taverns, saloons, or shops for the payment of wages, when employees of such establishments are not involved.

(e) Stipulations involving a direct or indirect obligation to purchase articles of consumption in specified shops or places.

(f) Stipulations permitting the retention of wages by way of fines.

(g) Stipulations constituting a waiver on the part of the workman of the indemnities to which he may become entitled by reason of labor accidents or occupational diseases, damages for nonperformance of the contract, or for discharge from work.

(h) All other stipulations implying the waiver of some right vested in the workman by labor laws.

XXVIII. The law shall decide what property constitutes the family estate. These goods shall be inalienable and may not be mortgaged, garnisheed, or attached, and may be bequeathed and inherited with simplified formalities in the succession proceedings.

XXIX. Institutions of popular insurance established for old age, sickness, life, unemployment, accident, and others of a similar character, are considered of social utility; the Federal and State Governments shall therefore encourage the organization of institutions of this character in order to instill and inculcate popular habits of thrift.

XXX. Cooperative associations for the construction of cheap and sanitary dwelling houses for workmen shall likewise be considered of social utility whenever these properties are designed to be acquired in ownership by the workmen within specified periods.

LABOR LAWS OF THE STATE OF COAHUILA, MEXICO.

BUREAU OF LABOR.

According to a communication from the vice consul at Piedras Negras, the governor of the State of Coahuila, Mexico, has issued a decree (No. 28) under date of September 28, 1916, creating a State bureau of labor. Its general purposes and provisions are summarized as follows:

To protect labor, regulate and standardize wages and hours of labor, and provide for the moral and physical development of the laboring classes; collect, collate, and publish pertinent data; act as an intermediary in the conciliation and arbitration of labor disputes; assist in formulating contracts between employers and employees; promote the formation of laborers' cooperative associations; endeavor to secure the attendance of laborers at night schools; hold

public meetings for discussion of civic rights, cooperation, and measures tending to elevate the mental and the moral condition of laborers; prepare and submit drafts of proposed legislation; and to investigate labor conditions in factories, workshops, and other places of employment throughout the State.

The bureau is composed of three divisions: Statistics, publication, and propaganda; conciliation and protection; and legislation. The official duties are under the supervision of a director, assistant director, and chief clerk. The last named also acts as librarian and recorder. All reports, results of investigations, and proposed legislation are to be transmitted to the governor. The decree became effective from the date of publication. The director of the new bureau is Sr. Antonio Palacios Roje; address, Saltillo, Coahuila, Mexico.

LABOR LAW.

Under date of October 27, 1916, the governor issued a decree (No. 30) regulating labor contracts, wages, hours of labor, settlement of labor disputes, collective agreements, breach of contract, and accident compensation. The following is a digest of its more important features:

Labor contracts.—Contracts with adults may be either verbal or written, but with persons under 18 years of age written contracts are required. Contracts made through agents or other intermediaries are null. A person not previously hired who, without objection, aids in performing any work is entitled to all the rights and is subject to all the obligations of persons under contract to perform the work. Labor without pay is prohibited. The employer is responsible for all contracts made by his manager or director. Contracts must specify the services required, basis of payment, and working place. All agreements which limit natural, civil, or political rights, which diminish or restrain liberty, which provide for gratuitous labor or provide for payment not proportionate to the hazards of employment or which is disproportionate to the labor required, and agreements which require service in perpetuity or for more than three years, are null.

Employment of children of 12 years of age¹ for work requiring close attention or great strength, and for work in places or under circumstances which are prejudicial to physical development, dangerous to health or morals, or which interfere with their instruction, is prohibited. Permission to employ such young persons in other capacities must be obtained from the public authorities upon request of parents, guardians, or other persons or institutions in loco parentis.

¹This seems to be the minimum age permitted.

Employment at night of any female or person between 12 and 16 years of age in factories or workshops or in agricultural labor and of females in mines is prohibited. Persons 18 years of age and over are competent to contract for their labor and to receive compensation therefor, but persons 12 to 18 years of age are competent to make contracts for labor only when authorized by proper guardians or public authorities.

Carrying or exhibiting pass books, labor cards, etc., is not obligatory. Employees may demand, at termination of contract, discharge certificates stating date of entering the service, date of leaving employment, and kind of labor performed.

Rights and duties of employers.—The employer is required to provide hygienic and healthful environments, adopt measures for accident prevention, and maintain first-aid equipment for injured; to make punctual payment of wages in manner and place stipulated, and, if the laborer is required to work outside of centers of population, to provide him with a commodious dwelling; if the laborer boards and lodges with the employer, suitable living conditions are required. The employer shall not establish, by reason of nationality, different scales of wages, conditions of living, treatment or consideration of laborers; and laborers shall not be compelled to rent dwelling places owned by an employer, entrepreneur, or other interested owner.

If the laborer is at the place of work designated at the stipulated hour, he must be paid for time lost due to the fault of the employer. Retention of any portion of wages as an indemnity, guarantee, or for other reason is prohibited.

Rights and obligations of employees.—These in general do not materially differ from provisions usually found in labor codes. However, the following provisions are reproduced as of interest. The laborer may refuse to work when he discovers unsafe conditions, whether endangering his own safety, that of his fellow workman, of any third party, or of the establishment. When required to work in imminent danger, or overtime, supplementary compensation is mandatory.

Maximum hours and minimum wages.—Hours of labor per day, excluding lunch and rest periods, in factories, workshops, and all industries, in the fields or other places in the open air, and in mines, shall not exceed eight. In public and private offices, and in all mercantile establishments, hours of labor shall not exceed nine. Hours of work at night are subject to agreement between the parties interested, and must be approved by the labor bureau. Time is computed from the arrival at place of work until the moment of cessation of work, but contracts may specify that time used by laborers in going to and from work to their homes, when the dis-

tance exceeds 4 kilometers (2.48 miles) may be considered as working time. Under extraordinary circumstances the hours may be increased by three per day not to exceed 60 days per year.

Young persons between 12 and 18 shall not be required under any circumstances to work more than six hours per day. One day of every seven shall be a day of rest, which, unless otherwise designated, shall be Sunday. Other days of rest are May 1 and September 16 of each year. No woman shall be employed during the 40 days following childbirth, but wages shall be paid women during this period. Mothers nursing children at the breast shall be allowed one-half hour in the morning and one-half hour in the afternoon as nursing periods.

Wages shall be sufficient to provide for the material necessity of the laborer and to assure the existence of good morals. For night work time and a half shall be paid. Unless wages are stipulated in the contract an employer is required to pay the wages demanded by the laborer, not exceeding the highest paid to that class. When earnings are based on weight or measure, process, or computation to determine the quantity or quality of work, the laborer has a right to examine these processes, etc. The use of due bills, scrip, or other evidence of wages due is prohibited. Agricultural laborers may contract for part payment in kind, but not to exceed 50 per cent of wages. Agreements for longer periods than the semimonthly payment of wages are void, except for domestic labor, which shall not exceed one month. When not mentioned in the contract, payment is required to be made each week. The payment of wages in places where spirituous liquors are sold, in cantinas, stores, or similar places is forbidden, except to persons employed therein. No deduction from wages is permitted except by order of competent public authority. Weekly wages to the amount of 20 pesos (\$9.96) are exempt from distress or attachment. In no case may more than 20 per cent of wages be subject to attachment. Earnings of persons between the ages of 12 and 18 years may be legally paid to them unless notice of claim is made by parents or others interested, in which case they shall be paid to the justice of the peace. All provisions requiring laborers to patronize certain stores or establishments are null.

Shop rules.—Shop rules must be approved by the labor bureau and posted in a prominent place in the establishment. They shall specify the rate and manner of determining wages or earnings, places and times of payment, hours of beginning and ceasing labor, and other rules common to labor codes.

Termination of contract.—The decree mentions the usual causes for termination of contract, such as death, mutual consent, etc. In case of termination of contract by reason of fire, explosion, war, etc., caus-

ing a stoppage of work for more than 30 days the laborer is entitled to 30 days' pay.

Collective contracts.—Representatives of any group or association may enter into an agreement with an employer, or group or association of employers. The agreement is binding on each member of the association or associations parties thereto, unless written notice of nonacceptance by the objector is properly served within eight days. All laborers or employers becoming members of the respective associations subsequent to such agreement are bound by it. Corporations not signatories to the agreement may accept the agreement by notice to parties already subject to it. Employers' or laborers' associations legally competent to enter into collective agreements must have at least five members, have adopted and registered a written constitution, established rules for legal representation, and declared the object for which constituted. Collective contracts and constitutions adopted by corporations bound thereby must be registered with the public authorities. Such registry is open for public inspection. Contracts may not be made for a period exceeding three years, and, unless the period is expressly stipulated, are for one year. They may include all laborers who are members of the associations contracting, or of contracting employers' associations, all of a definite class of laborers or contractors, or all those within a definite section of the State.

The following provisions apply to workmen's cooperative associations: Annual distribution of profits; members are not individually responsible for losses; members withdrawing before the annual distribution of profits lose their rights in such distribution; the profits of any one year shall not be appropriated to cover losses of any previous years; auditors are to be elected annually by the members; the manager shall have the sole authority in the direction of the work or exploitation; decreased profits or losses shall not work forfeiture of contracts entered into in good faith. These associations are administered in accordance with regulations agreed upon between the manager and the members of the association.

Conciliation and arbitration.—The executive of each municipality in which no labor inspector is appointed by the labor bureau is authorized to inspect and supervise labor conditions and operations under collective agreements and to act as conciliator in labor disputes.

General provisions.—In general they relate to the protection of laborers—payment of wages, interpretation of contracts, enforcement of law, judicial procedure, and penalty for failure to abide by an arbitral decision.

Expenses incurred by the laborer in traveling from his place of residence to a locality of future employment when over 20 kilometers (12.43 miles) shall be at the cost of the employer, payable at completion of contract.

No factory, workshop, mine, works, agricultural enterprise, or establishment of any kind; no employer, superintendent, or other person in any way connected with the operations or having any authority over the employees therein engaged shall establish any store, canteen, or other place for dispensing goods, unless: Laborers are at liberty to purchase or not; a list of prices is posted in a conspicuous place in the store, and a copy of it filed with public officials; laborers and their families are permitted to purchase goods so long as the laborer is at work for the establishment; goods are sold at cost, and notice of the opening of the store, etc., is filed with the public authorities, which authorities may object to or close any shop already opened.

Labor camps, mines, industrial establishments, and other enterprises in rural districts removed from centers of permanent population, or where more than 10 families or 20 laborers are required to remain 90 days, shall designate a public square where merchants, storekeepers, venders, or meetings, or licit shows may be established, and other plots of land shall be dedicated—one for a cemetery and one for a primary school. No person shall be required to pay a fee for the privilege of conducting the trades mentioned or for entrance into or exit from the public square.

There shall be no obstacle to the free transit over highways or roads leading to the working place, to the transportation of goods, and to the passage of wagons or saddle horses, nor shall any charge, toll, tax, or other form of charge be made for such travel, even when such roads are of private ownership. Free communication between persons in industrial centers and persons outside shall not be obstructed, but during the hours of labor such communication within the establishment is permitted only by the sanction of the director. In such centers the application of any correctional methods which deprive the laborer of his personal liberty is prohibited. If there be no public authority established, the director of the establishment is required to take such means as will provide for the security of persons responsible for misdemeanor and for the care of persons suffering from it, and shall immediately report the case to the nearest competent authority.

Industrial accidents.—The employer is responsible for accidents to laborers and employees arising out of and in the course of their employment. The following classes of establishments are subject to this provision: (1) Factories and workshops employing more than five persons and using motive power other than hand; (2) mines and quarries; (3) constructing, repairing, and conserving buildings, bridges, canals, dikes, aqueducts, sewers, railroads, urban or suburban quarries; (3) companies constructing, repairing, and conserving buildings, bridges, canals, dikes, aqueducts, sewers, railroads, urban

or suburban, or engaged in other similar work, including masonry and all subsidiary occupations such as carpentering, locksmithing, stone dressing, painting, etc.; (4) foundries and metallurgical establishments; (5) those engaged in loading, unloading, and transportation; (6) all establishments engaged in manufacturing, where unhealthy, toxic, explosive, and inflammable materials are used industrially; (7) agricultural work, where other power than manual strength is used; (8) seed hulling mills and railroad workshops; (9) well, privy, cesspool, and sewer cleaning; (10) gas and electric generating plants, telephone and telegraph service, including installation and repair, post setting, wiring, and transmission conduit laying inside or outside of the establishment; (11) theaters, cinematograph exhibitions, and circuses as regards salaried employees; (12) any other similar work or establishment.

Civil responsibility (art. 117) in case of accident includes the immediate payment of medical and pharmaceutical aid, and the payment of full wages of the injured person during the period of disability, not exceeding six months, and burial expenses in case of death.

In addition (art. 118) the employer shall pay the following benefits: In case of temporary total incapacity to perform labor a compensation equal to the earnings or daily wages paid at the time of injury, from the day the wound is declared healed until the injured person is able to return to work, but not to exceed two years.

If the incapacity is partial only, the compensation for temporary incapacity shall equal one-half of the injured person's wages, payable from the day the wound is declared healed until the injured person is able to return to work; and for permanent incapacity, for one year and six months.

If the disability is total and permanent an indemnity equal to the earnings or daily wages of the injured person is payable for two years from the date the wound is declared healed.

In case of death due to accident (art. 119) the employer shall pay the surviving spouse and children under 18 years of age and dependent ascendants full earnings or wages in compensation as follows: For two years to wife and children; one and a half years when only children survive; one year when only the spouse survives. If the survivor be a husband this is payable only when he is incapacitated for all work. Upon marriage the indemnity ceases. When no spouse or child is left compensation becomes payable to the nearest ascendants, if dependent, but for 10 months only.

If the injured person dies (art. 120) within the periods mentioned in article 118, the compensation shall continue payable in the order mentioned in article 119 for the time between death and the completion of the periods mentioned in article 119.

Compensation to descendants ceases when the children or grandchildren [sic] become 16 years [sic] of age, but that of the widowed spouse shall continue for the full period.

No compensation is payable in case the accident causes incapacity not exceeding three days.

These compensations are payable only when the annual earnings do not exceed 1,000 pesos (\$498). When the earnings exceed that amount one-fifth of these amounts only are payable.

The physician under whose care an injured person is placed is required to report to the labor bureau the character of the injury and the healing of the wound, with a statement as to estimated time necessary for complete recovery and the permanent effects of the injury, and, in case death ensues, make immediate report to the labor bureau, which shall appoint a board consisting of a physician or experienced practitioners to conduct an autopsy, the result of which shall be reported to the bureau.

No civil responsibility exists in case of (1) force majeure outside of the labor performed or of the industry; (2) inexcusable negligence of the laborer; (3) intent of the laborer to cause injury; (4) non-observance by the laborer of shop rules relative to labor. The establishment of these causes of injury rests upon the employer.

Upon notice of an accident the bureau shall require the employer to provide the medical care and pay the compensation mentioned in article 117, and will take measures to compel the prompt payment of other classes of compensation. All agreements between laborers and employers as to accident compensation shall be approved by the bureau, otherwise no benefits shall accrue to the employer by reason of such agreements. Expense of judicial proceedings is charged to the employer whenever compensation is decreed by the court. In case an employer appeals from the final decision of the court, 50 per cent of the compensation is payable until the case is decided by the higher court.

This law is independent of laws relative to criminal responsibility, but penalties incurred by an employer under other laws are subject to reduction equal to the amount paid by him as compensation. If penalties as above are decreed against a third party, the employer has a right of action against the third party to recover such penalties. If the court of last resort reverses a decision awarding compensation a right of action follows to recover amounts already paid. This law being for the exclusive benefit of laborers, rights to compensation are not assignable, may not be renounced or reduced by any agreement made prior to the accident, neither shall compensation awards be subject to seizure or attachment for debt. Actions under this law may not be brought after two years. Unless shop rules are posted the employer has no defense in cases relative to compensation.

ARBITRATION AND CONCILIATION.

CONCILIATION WORK OF THE DEPARTMENT OF LABOR, AUGUST 16 TO SEPTEMBER 15, 1917.

Under the organic act of the department, which gives the Secretary of Labor the authority to mediate in labor disputes through the appointment, in his discretion, of commissioners of conciliation, the Secretary exercised his good offices between August 16 and September 15, 1917, in 47 labor disputes. The companies involved, the number of employees affected, and the results secured, so far as information is available, were as follows:

STATEMENT SHOWING NUMBER OF LABOR DISPUTES HANDLED BY DEPARTMENT OF LABOR, THROUGH ITS COMMISSIONERS OF CONCILIATION, SUBSEQUENT TO AUG. 15, 1917.

Name.	Workmen affected.		Result.
	Directly.	Indirectly.	
Strike at Holt Manufacturing Co., East Peoria, Ill.	900	200	Pending.
Strike of trainmen of the Dayton, Covington & Piqua Interurban R. R., West Milton, Ohio.	28	20	Unable to adjust.
Controversy between Cape Ann Anchor Works and its blacksmiths, Gloucester, Mass.			Adjusted.
Controversy between Oliver Machinery Co. and its machinists, Grand Rapids, Mich.			Do.
Strike of machinists of the Automatic Electric Co., Chicago, Ill.	180	1,000	Do.
Controversy between Texas & Pacific Ry. and shop metal crafts, Dallas, Tex.	554		Do.
Controversy between Padgitt Bros., Dodson Saddlery Co., Schoelkopf Saddlery Co., and their leather workers, Dallas, Tex.	90	175	Dodson case adjusted; other 2 pending.
Strike of molders of the Budd Grate Co., Philadelphia.			Pending.
Strike of longshoremen, Morgan S. S. Line, N. Y.	1,000		Adjusted.
Controversy, Brunswick Marine Construction Co., Carpenter-Watkins Shipbuilding Co., and the Yaryan Rosin & Turpentine Co., Brunswick, Ga.	900		Do.
Controversy, Bath Iron Works, Hyde Windlass Co., Torrey Roller Bushing Co., Kelley-Spear Co., Texas Shipbuilding Co., Bath, Me.	300	2,500	Do.
Strike at the Shipyard of Pusey & Jones, Wilmington, Del.			Do.
Controversy between Coal & Coke R. R. and its mechanical force.	159	185	Do.
Controversy between New England Coal & Coke Co. and its seamen.			Pending.
Strike of clerks and freight handlers, Ashland, Ky.			Do.
Controversy between machinists and employers, Muskegon, Mich.			Do.
Controversy between General Petroleum Corporation and its employees, Los Hills, Cal.	30	4,000	Adjusted.
Strike at the Baush Machine Tool Co., Springfield, Mass.	175	105	Pending.
Strike of knitters of the Superior Manufacturing Co., Hoosick Falls, N. Y.			Do.
Controversy between Boston & Maine R. R. and its mechanical force.			Adjusted.
Strike of 400 girls at Kayser's factory, Brooklyn, N. Y.	400		Pending.
Controversy in the McDonald oil fields, McDonald, Pa.	100	32	Adjusted.
Strike at J. B. Stetson Hat Factory, Philadelphia, Pa.	90	900	Do.
Strike at the Drawn Steel Co., Beaver Falls, Pa.			Pending.
Controversy between Texas Light & Power Co. and its employees, Taylor, Tex.	9		Do.
Controversy between Furness, Withy & Co. (Ltd.) and its longshoremen, Norfolk and Newport News, Va.			Do.

STATEMENT SHOWING NUMBER OF LABOR DISPUTES HANDLED BY DEPARTMENT OF LABOR, THROUGH ITS COMMISSIONERS OF CONCILIATION, SUBSEQUENT TO AUG. 15, 1917—Concluded.

Name.	Workmen affected.		Result.
	Directly.	Indirectly.	
Strike at the Southern Manufacturing Co., Richmond, Va.....			Pending.
Controversy between American Rolling Mill and its blacksmiths and helpers, Middletown, Ohio			Do.
Controversy between carpenters and employers, Los Angeles, Cal.	2,000	3,000	Do.
Strike of woodsmen, Saginaw & Manistee Lumber Co., Williams, Ariz.			Do.
Controversy, Hercules Mining Co., Wallace, Idaho			Do.
Strike at North American and Quaker Lace companies, Philadelphia, Pa.			Adjusted.
Controversy, Bollinger-Andrews Co., Verona, Pa.			Pending.
Strike at four packing plants, Omaha, Nebr.	6,000		Adjusted.
Strike of machinists, boiler-makers, blacksmiths, sheet-metal workers and carmen on Kansas City, Mexico & Orient R. R., Wichita, Kans.			Do.
Strike at Bluejay Lumber Co., Bluejay, W. Va.			Pending.
Strike of clerks of the Seaboard Air Line R. R. Co.			Do.
Strike at Cudahy Packing Plant, Kansas City, Mo.			Adjusted.
Strike of employees of Chattanooga Street R. R. Co., Chattanooga, Tenn.			Pending.
Strike of sheet-metal workers, Hartford, Conn.			Do.
Controversy between Missouri & Northern Arkansas R. R. Co. and its maintenance of way employees, Harrison, Ark.			Do.
Controversy, building trades, Omaha, Nebr.			Do.
Controversy between Maxim Munition Co. and employees, Derby, Conn.			Do.
Strikes at Peet Bros. Manufacturing Co. and Procter & Gamble Soap Factory, Kansas City, Mo.			Do.
Strikes at Swift Packing Co., Armour & Co., Wilson & Co., and Morris & Co., Kansas City, Mo.			Adjusted.
Strike of slaughtermen of the Frye Packing House, Seattle, Wash.			Pending.
Strike of lumbermen, Flagstaff, Ariz.			Do.

Cases noted in statement dated August 16 have been disposed of as follows:

Strike at the foundry and machine works of J. Thompson & Co., Philadelphia. Unable to adjust.

Strike of pattern makers, Indianapolis, Ind. Adjusted.

Threatened strike at the Olympia Shipyards Co. and Sloan Shipyards Co., Olympia, Wash. Adjusted.

Strike at the Gilmer Fuel Co., Fairmont district, W. Va. Adjusted.

Strikes at New River Coal Co., Dunloop, W. Va.; Ephram Coal Co., Thayer, W. Va.; New River Co., Skelton, W. Va.; and Raleigh Coal Co., Raleigh, W. Va. (New River district). Adjusted.

Strike at textile mills of C. A. Masland & Sons, Philadelphia. Unable to adjust.

Strike of timber workers, Menominee River Lumber Mills, Marinette, Wis. Adjusted.

Strike in forge shop of Jennings & Johnston Co., Cleveland, Ohio. Strikers returned to work.

Strike at Bement—Niles Works of Bement-Niles-Pond Co., Philadelphia, Pa. Unable to adjust.

Controversy between Alabama coal miners and operators. Adjusted.

Controversy between Chicago & Alton R. R. and its electrical workers, Bloomington, Ill. Adjusted.

Controversy between the Great Northern R. R. Co. and its boiler-makers, St. Paul, Minn. Strike averted.

IMMIGRATION.

IMMIGRATION IN JUNE, 1917.

The number of immigrant aliens admitted to the United States during the year 1916 was 355,767, as compared with 258,678 for the year 1915, an increase of 97,089, or 37.5 per cent. During the current year the figures for the first six months show a considerable falling off of immigration. The decrease from the preceding month for January, February, and March, 1917, is 19.9, 22.3, and 19.4 per cent, respectively. For April, however, the number of immigrant aliens admitted shows an increase of 32.3 per cent over the number admitted in March. During May, immigration reached the point of low ebb, only 10,487 immigrant aliens having been admitted, the smallest total for any month in many years. As compared with April, the figures for May show a decrease of 48.9 per cent. The figures for June indicate an increase of 5.5 per cent over those for May. These facts are brought out in the following table:

IMMIGRANT ALIENS ADMITTED INTO THE UNITED STATES IN SPECIFIED MONTHS,
1913 TO 1917.

Month.	1913	1914	1915	1916	1917	
					Number.	Per cent increase over preceding month.
January.....	46,441	44,708	15,481	17,293	24,745	19.9
February.....	59,156	46,873	13,873	24,740	19,238	22.3
March.....	96,958	92,621	19,263	27,586	15,512	19.4
April.....	136,371	119,885	24,532	30,560	20,523	32.3
May.....	137,262	107,796	26,069	31,021	10,487	48.9
June.....	176,261	71,728	22,598	30,764	11,095	5.5
July.....	138,244	60,377	21,504	25,035	.....	.....
August.....	126,180	37,706	21,949	29,975	.....	.....
September.....	136,247	29,143	24,513	36,398	.....	.....
October.....	134,440	30,416	25,450	37,056	.....	.....
November.....	104,671	26,298	24,545	34,437	.....	.....
December.....	95,387	20,944	18,901	30,902	.....	.....

1 Decrease.

Classified by races, the number of immigrant aliens admitted to and emigrant aliens departing from the United States during June, 1916 and 1917, was as follows.

IMMIGRANT ALIENS ADMITTED TO AND EMIGRANT ALIENS DEPARTING FROM THE UNITED STATES, JUNE, 1916 AND 1917.

Race.	Admitted.		Departed.	
	June, 1916.	June, 1917.	June, 1916.	June, 1917.
African (black).....	643	943	171	209
Armenian.....	106	28	1	29
Bohemian and Moravian.....	46	13	5	1
Bulgarian, Servian, Montenegrin.....	305	46	3	120
Chinese.....	171	140	207	130
Croatian and Slovenian.....	33	3	2	.....
Cuban.....	498	238	201	214
Dalmatian, Bosnian, Herzegovinian.....	4	2	.....	.....
Dutch and Flemish.....	615	346	94	62
East Indian.....	7	1	2	3
English.....	3,016	1,221	715	853
Finnish.....	459	331	96	341
French.....	1,853	583	361	919
German.....	841	196	69	69
Greek.....	3,791	251	107	139
Hebrew.....	1,292	752	13	177
Irish.....	2,123	403	160	202
Italian (north).....	424	63	311	89
Italian (south).....	5,374	554	650	800
Japanese.....	974	896	56	52
Korean.....	1	1	2	1
Lithuanian.....	39	14	.....	28
Magyar.....	43	3	43	3
Mexican.....	1,070	84	45	87
Pacific Islander.....	.....	2	.....	.....
Polish.....	460	39	31	26
Portuguese.....	715	350	62	3
Roumanian.....	74	20	9	3
Russian.....	319	137	546	1,745
Ruthenian (Rusniak).....	88	2	5	8
Scandinavian.....	1,811	1,544	639	405
Scotch.....	1,288	398	215	198
Slovak.....	15	.....	11	21
Spanish.....	1,354	1,016	212	293
Spanish-American.....	267	254	51	46
Syrian.....	55	11	4	17
Turkish.....	38	3	3	21
Welsh.....	72	29	9	17
West Indian (except Cuban).....	157	146	48	30
Other peoples.....	283	32	54	101
Not specified.....	.....	.....	1,148	.....
Total.....	30,764	11,095	6,361	7,462

INDUSTRIAL NOTES.

CLEARING HOUSE FOR EMPLOYMENT AGENCIES.—The Mayor's Committee of National Defense, New York City, has completed plans to establish a clearing house for the 50 or more free employment agencies dealing with men and boys. It will be administered by Charles B. Barnes, director of State public employment offices. The mayor's committee has appropriated \$5,000, and the State has provided \$10,000 for the work. All noncommercial bureaus will have access, under proper restrictions, to requests made by employers to all other bureaus, and a man or boy making application to any one bureau will be considered for any opening which comes to the knowledge of others.

New York Times, August 20, 1917.

IMPROVED HANDLING OF FREIGHT.—The Railroads' War Board announces that its Commission on Car Service reports that in the month of June, with only 3 per cent more equipment, the railroads of the country rendered nearly 26 per cent more freight service than in June of last year. The actual increased service amounted to about 4,000,000 ton-miles, or 25.7 per cent of the total. The result was attained by intensive loading and by increasing the daily mileage of freight cars 13.6 per cent.

New York Times, August 28, 1917.

INCREASED WAGES FOR TEXTILE WORKERS.—Six great textile plants in the vicinity of Passaic, N. J., have notified their 15,000 employees of an increase in wages of 10 per cent, or about a million dollars. Most of these mills are working on Government contracts.

New York Times, September 8, 1917.

SUICIDES AMONG INDUSTRIAL POLICYHOLDERS.—According to a recent study by the Metropolitan Life Insurance Co. the death rate from suicide among industrial workers is decreasing. Among 4,000,000 insured white males the rate of suicide per 100,000 was 19.6 in 1915 and 15.3 in 1916. Among nearly 5,000,000 insured white females there were 7.5 suicides per 100,000 in 1915 and 6.3 in 1916. The rates among Negro policyholders in 1916 were 8.2 per 100,000 males and 3.4 per 100,000 females. The white male suicide rate increases with each age period, being highest at the ages of 65 to 74, when it is more than 80 per 100,000. Among both male and female policy-

holders under 25 years of age the suicide death rate is lower than that of the general population of the registration area, but for each age period after 25 the suicide rate is slightly higher among insured males than for the male population at large.

Press Bulletin Metropolitan Life Insurance Co., August 28, 1917.

CURTAILED PRODUCTION IN BRITISH COTTON MILLS.—The Cotton Control Board has published its scheme for conserving supplies of raw cotton, and regulations have been issued which provide for the stoppage of 40 per cent of the spinning and weaving machinery in Lancashire from the beginning of September. On conditions laid down by the board it will be possible for certain firms to run more than 60 per cent of their machinery on the payment of levies. The funds created in this way will be used to supplement the unemployment funds of the trade-unions, and to ameliorate the distress of the temporarily unemployed operatives. In view of these arrangements the trade-union officials have suspended their application for an increase in wages.

Economist (London), August 18, 1917.

LARGER PRODUCTION FOR BRITISH WOOLEN MILLS.—The Central Wool Advisory Committee has decided to withdraw the order reducing the working hours in factories where wool is consumed to 45 per week, and to issue another order permitting a 50-hour week. At the same time it is intimated that no guaranty can be given that firms employed principally in civilian manufacture shall have sufficient wool to work 50 hours per week.

Economist (London), August 18, 1917.

INCREASE IN WORKMEN'S COMPENSATION IN GREAT BRITAIN.—The House of Commons has passed the workmen's compensation (war addition) bill, the purpose of which is to increase by 25 per cent, because of the cost of living, all weekly disablement payments under the act of 1906.

Economist (London), August 18, 1917.

HIGHER PAY ASKED FOR BRITISH SOLDIERS AND SAILORS.—The question of increasing the pay of soldiers and sailors of Great Britain has been taken up by the General Federation of Trade Unions, because of the fact that there are about 1,250,000 trade-unionists in the army. The management committee proposes that the minimum net allowance to a British soldier shall be 3 shillings (73 cents) a day, and that the Government shall provide and pay all allotments to wives and dependents. It is roughly estimated that this will cost £125,000,000 (\$608,312,500) a year, but it will be a diminishing cost. A joint parliamentary committee has been appointed to take the matter under consideration.

Christian Science Monitor (Boston), September 6, 1917.

MINIMUM WAGE FOR BRITISH AGRICULTURAL LABOR.—The corn production bill [which provides among other things for a minimum weekly wage of 25 shillings (\$6.08) for farm labor] became law before the adjournment of the British Parliament, August 21.

New Statesman (London), August 25, 1917.

REDUCED FARES FOR AGRICULTURAL LABOR IN FRANCE.—To facilitate the transportation of day laborers—men, women, and children—engaged in grape picking, the Orleans railroad company has reduced to one-half, for the months of September and October, the third-class fare for parties of five or more persons making, for the round trip, a journey of at least 100 kilometers [62 miles]. This rate applies to certain departments only, and the tickets are not good for return under 8 or after 50 days. The same rate is granted in the case of one or more men and women going to and from centers of raisin production between August 25 and November 15, both inclusive.

La République Française (Paris), August 25, 1917.

TURKISH BOYS AT WORK IN GERMANY.—In accordance with an arrangement made between the German and Turkish authorities, 500 Turkish boys have been distributed in twos and threes throughout Germany—300 being apprenticed to various trades and 200 to colliery work. They are shortly to be followed by 500 others, who will devote their attention to agriculture.

Christian Science Monitor (Boston), August 30, 1917.

PUBLICATIONS RELATING TO LABOR.

OFFICIAL—UNITED STATES.

CALIFORNIA.—*Industrial Accident Commission. Safety News. Volume 1. No. 8. San Francisco, August, 1917. 15 pp.*

This issue of the News contains an article on oil-fire flarebacks, and tank and bin accidents, and one on safety as applied to the steam tire mold and tube press.

The first article refers to the accidental death of a night watchman who in starting a fire in a laundry furnace, it is thought, had turned oil into the hot furnace without first having a flame at a point where the oil would come into contact with it and thus avoid the accumulation of explosive gases. Rules and information for the handling and use of fuel oil are given. The article also describes the death of two men and the narrow escape of three additional men who were overcome by hydrogen sulphide gas in a chemical plant. It emphasizes the importance of not permitting men to enter a tank or bin until it has been cleared of gases, of providing forced ventilation, and of tying a rope about the body of a man entering the tank, the other end of this rope being held by a man stationed outside.

OHIO.—*Industrial Commission. Decisions in claims arising under the workmen's compensation law considered and determined by the Industrial Commission of Ohio. Columbus, April 2, 1917. 165 pp.*

Devoted exclusively to opinions in cases arising under the workmen's compensation act. The preface states that since the elective workmen's compensation act of 1911 went into effect more than 300,000 claims arising out of industrial accidents have been filed by claimants and adjudicated by the Industrial Commission of Ohio and its predecessor, the State liability board of awards. A finding of facts is made in each claim decided by the commission, and the same is made a matter of record, but opinions have been prepared in only a few of the claims determined by the commission. The opinions published in this bulletin deal with some of the more important questions constantly coming before the commission, and they are published with the hope that they may be of service to employers and employees subject to the workmen's compensation act.

— — *Department of Investigation and Statistics. Report No. 28. Rates of wages, hours of labor, and fluctuation of employment in Ohio in 1915. Springfield, 1917. 336 pp.*

A review of this report, based upon an advance statement sent out by the industrial commission, appeared in the MONTHLY REVIEW for February, 1917, pages 227 to 230.

PENNSYLVANIA.—*Department of Labor and Industry. Monthly Bulletin. February, 1917. 192 pp. March, 1917. 125 pp. Harrisburg.*

These bulletins are devoted entirely to articles and discussions as presented at the fourth annual welfare and efficiency conference of the Department of Labor and Industry at Harrisburg in November, 1916. In the February issue the papers relate particularly to workmen's compensation and accident prevention. Statements of the first 10 months of the operation of the workmen's compensation law and of the operation of the law from the viewpoint of the manufacturer, the employee, and the physician are presented. Employment

problems are also given attention. Special subjects are: The accident problem of the steam and electric railways; the evils of railroad trespassing; reducing the labor turnover; organized labor and the State employment bureau; the elimination of labor disputes; standardization of safety committees and safety committee work. Most of the papers published in the March issue were delivered before the medical session and relate chiefly to health insurance, medical supervision of workmen, industrial injuries to the eyes, tuberculosis as it affects the worker, and some hazards of the chemical industry and their prevention. There were also papers on the foreman's duty toward accident prevention, the employee's duty toward accident prevention, and how to reach the non-English-speaking workman.

WISCONSIN.—*Industrial Commission. Apprenticeship. First report, year ending December 31, 1916. Madison, 1917. 14 pp.*

This report is noted on pages 163 to 166 of this issue of the MONTHLY REVIEW.

— — — *Electrical safety code. Madison, July 1, 1917. 32 pp.*

In pursuance of its authority to fix standards of safety in all places of employment, and to formulate rules and regulations relative to the enforcement of such standards, the industrial commission, in cooperation with the railroad commission, after hearings as to the reasonableness of proposed orders, has issued this safety code which became effective July 1, 1917. It is divided into four parts: Application and definitions; all electrical work; electrical equipment; and electric lines. There is an index.

— — — *Hours of labor for women and children. [Madison], August, 1917. 4 pp.*

This leaflet is a summary of the requirements as to hours of labor for women and children in force in Wisconsin, including provisions of the laws enacted by the last legislature and all of the orders upon this subject issued by the industrial commission.

UNITED STATES.—*Department of the Interior. Bureau of Education. Negro education. A study of the private and higher schools for colored people in the United States. Vol. I, 423 pp. Illustrated. Vol. II, 724 pp. Maps. Washington, 1917.*

Volume I contains a chapter on industrial education, setting forth the importance of the Negro to southern industry, the importance of industrial education to the colored people, public and private facilities for industrial education, and means and methods for giving such instruction, including opportunities offered for manual training in the elementary grades, vocational outlook and elementary economics in secondary and higher schools, rural trades in smaller industrial schools, trade schools. The chapter closes with a State program for industrial efficiency. Volume II is devoted almost entirely to opportunities for education offered the colored people in many of the States.

— — — *Department of Labor. Children's Bureau. Summary of child welfare laws passed in 1916. Miscellaneous series No. 7, Bureau publication No. 21. Washington, 1917. 74 pp.*

The child welfare laws passed in 1916 are here summarized and arranged under the following general heads: Parent and child; offenses against the child; health and sanitation, including recreation; child labor and school attendance; defective, delinquent, and dependent children; miscellaneous provisions affecting children. There is a topical index by political divisions, and an outline for an index of existing legislation affecting child welfare.

— — — *Interstate Commerce Commission. Accident Bulletin No. 62. Washington, 1917. 114 pp.*

This report is noted on pages 146, 147 of this issue of the MONTHLY REVIEW.

OFFICIAL—FOREIGN COUNTRIES.

CANADA.—*Department of Labor. Sixth annual report on labor organization in Canada (for the calendar year 1916). Ottawa, 1917. 230 pp.*

A digest of this report appears on pages 105 to 107 of this issue of the MONTHLY REVIEW.

— *Military Hospitals Commission. Special bulletin, April, 1916. Ottawa. 108 pp. Illustrated.*

This bulletin contains a rather comprehensive report by W. M. Dobell, a member of the Military Hospitals Commission, on what had been accomplished in England, France, and Belgium at the time of his visit, during the winter of 1916-17, in the way of restoring disabled soldiers so that they might become wage earners instead of pensioners merely. He refers particularly to the handicap under which the work was progressing in England owing to the fact that at that time a soldier's pension was reduced as soon as he became able to provide for himself. There is an article by Dr. Amar, directeur, Laboratoire des Recherches sur le Travail Professionnel, Paris, on "Organization of the training of the disabled" which was briefly referred to in the MONTHLY REVIEW for June, 1917 (p. 850). The work of the Anglo-Belgian hospital at Rouen is described by Dr. Armand Deltenre, director, Belgian Army Medical Service, who outlines the origin, organization, and working of the therapeutic and orthopedic institute at Rouen, with some account of the special appliances for mechanotherapeutic treatment in use there. Illustrations accompanying this and Dr. Amar's article show graphically what is being done to restore disabled soldiers. The bulletin also includes an abridged translation of an article in *La Revue Philanthropique* for January, 1916, by Dr. Bourillon, directeur de l'Institut National Professionnel des Invalides de la Guerre, St. Maurice, giving an account of the methods adopted in the training of disabled soldiers at the Vacassy Institute for the reeducation and maintenance of maimed men, which is associated with the Hospital of St. Maurice, near Paris. Provision for war cripples in Germany is described by Douglas C. McMurtrie, editor of the *American Journal of Care for Cripples*, and Dr. C. K. Clarke, dean of the medical school, University of Toronto, contributes a memorandum on the treatment of mental and nervous disorders by modern methods, with suggestions as to the facilities which might be provided in Canada for returned soldiers suffering from such maladies. A brief statement of the treatment of Canadian wounded in England closes the bulletin.

CHILE.—*Ministerio del Interior. Lei No. 3170 sobre indemnizaciones por accidentes del trabajo i reglamento jeneral. Santiago de Chile, 1917. 54 pp.*

This pamphlet contains a copy of the workmen's compensation law enacted in Chile in December, 1916, which was noted in the MONTHLY REVIEW for April, 1917 (pp. 556, 557). Following this are seven chapters of rules and regulations, promulgated on June 19, 1917, governing the operation of the law. These chapters relate to general rules, industries or occupations subject to the law, liability of employers, guaranties, judicial procedure, insurance against accidents, and administrative control. Regulations provide for determining the basis of compensation and for calculating the amount. An employer may be relieved of his liability by individual or group insurance of his workmen in approved associations or companies issuing accident policies, and employers may organize mutual accident insurance associations. No premium deductions are permitted from the earnings of insured workmen. In enumerating the classes of insurance associations and companies which may legally undertake accident insurance, it is provided that they shall create and maintain special funds for meeting obligations due to such insurance. The classes of insurance

valid for deposit for this purpose are specified. The transactions of any insurance body are subject to governmental inspection and supervision, and illegal proceedings or insufficient capital or reserve may cause suspension or revocation of authority to undertake accident insurance.

DENMARK.—*Statistiske Departement. Statistiske Meddelelser. 4 Række, 52 Bind. 3 parts in 1. Copenhagen, 1917. 136, 65, 161 pp.*

Part I of the report contains statistical data of 6,061 deaths due to accidents during the period 1906 to 1915. Of this number 1,551 persons (1,472 males and 79 females) died as a result of industrial accidents. The report states that it was found impossible to segregate all occupational accidents, as some reports were not sufficiently clear on that point. In some cases accidental deaths occurring in other than regular employment have been included, while deaths due to accidents happening while the person was occupied, but in an occupation not properly classed as industrial, e. g., sailing or fishing for pleasure, etc., have been omitted. The group agriculture, forestry, and fishing is charged with 592 deaths (38.2 per cent), transportation with 336 (21.9 per cent), unskilled laborers with 257 (16.6 per cent), and industry with 248 (15.3 per cent).

This publication, noted more fully on pages 158 and 159 of this issue, also includes the report of an investigation of housing in 74 cities of Denmark.

GERMANY.—*Reichsamt des Innern. Die Arbeiterschutzvorschriften im Deutschen Reich zur Durchführung der Artikel 120 a bis 120 e bzw. auf Grund der Artikel 120 e und 120 f, sowie der Artikel 139 a und 129 h der Gewerbeordnung, Berlin, 1915. XVIII. 559 pp.*

In 1897 the Imperial Office of the Interior issued for the first time a compilation of workmen's protective regulations, enacted by the individual State authorities in pursuance of article 120e of the industrial code, against dangers to life, health, and morals. This compilation was kept up to date by the publication of two supplementary volumes in 1902 and 1905. Ten years having elapsed since the publication of the last supplement, and a large number of new protective regulations having been enacted while old regulations had meanwhile been abrogated, the imperial office of the interior considered a new compilation necessary and issued the present volume.

This compilation presents in one volume all workmen's protective regulations enacted in Germany in pursuance of articles 120a to 120c, 120e, 120f, 139a, and 139h of the industrial code by the imperial as well as the State authorities and consequently goes far beyond the scope of the former compilation. Under the term "regulations" are included in this volume not only laws, decrees, orders, etc., but also compilations of principles (*Grundsätze*), memoranda, etc. Although these latter have no direct mandatory effect, they are not less important than the regulations proper, because in the supervision of industrial establishments they guide the authorities in determining their requirements in the interest of proper protection of the workmen as to equipment and operation of such establishments.

The present volume is divided into three parts. In the first part the titles of protective regulations are grouped by States and administrative districts. In the second part the titles are grouped by industry groups, while in the third part is given the text of the more important regulations. The volume is concluded by a comprehensive topical index intended to facilitate the use of the volume as a handbook.

GERMANY.—*Reichsversicherungsamt. Statistik der Heilbehandlung bei den Versicherungsanstalten und Sonderanstalten der Invalidenversicherung für das Jahr, 1914.* (Amtliche Nachrichten des Reichsversicherungsamts, 1915. 1. Beiheft.) Berlin, 1915. 130 pp.

A supplement of the official bulletin of the German Imperial Insurance Office, giving the annual statistics of curative treatment granted by the workmen's invalidity insurance institutes during the year 1914. This volume, although published in 1915, has been greatly delayed in transmission to the bureau.

GERMANY (BADEN, GRAND DUCHY OF).—*Statistisches Landesamt. Statistisches Jahrbuch für das Grossherzogtum Baden. 1914 und 1915.* 41. Jahrgang. Karlsruhe, 1915. XXIII, 511 pp. Charts and maps.

The statistical yearbook for the grand duchy of Baden for the years 1914 and 1915, containing statistical data usually shown in publications of this kind. Of interest to labor are the data on industrial establishments, factory inspection, handicraft chambers, trade-continuation schools, employers' and workmen's organizations, employment exchanges, strikes and lockouts, collective agreements, migration of workmen, wholesale and retail prices, wages, and social insurance.

NORWAY.—*Departementet for Sociale Saker, Handel, Industri og Fiskeri. Om Utfærdigelse av en Lov om Industrielt Hjemmearbeide.* [Christiania, 1917.] 199 pp. (Storting, 1917. Odelsting, Proposition nr. 38.)

— Utkast til Lov om Industrielt Hjemmearbeide med Motiver; Indstilling fra den av det kongelige Departement for Handel, Sjøfart og Industri under 26de Oktober 1912 Nedsatte Komite. Christiania, 1914. 3 p. l., 177 pp.

The Department of Commerce, Shipping, and Industry in 1912 appointed a committee to investigate and report upon homework in Norway and to draft a law for its regulation. The report of this committee was printed in 1914. In 1916 the department, which had been reorganized in 1912 as the department of labor, commerce, industry, and fisheries, considered the draft law of the committee, reviewed its report, and with royal assent submitted a Government measure for enactment by the present session of the Storting. The two publications here noted form the reports of the earlier committee and the later review and report of the department. Together they constitute a history of home work in Norway, a review of minimum-wage legislation in other countries, and a description of the situation of the home worker in the kingdom. The department proposes legislation which accepts the principle of the minimum wage by law and extends the protection of the factory code to home work, principles also accepted by the subcommittee of the department. Both the committee and the department suggest the fixing of the wage by special boards within certain guiding limits set down in the law. These committees are to be representative of the different parties interested and under the general oversight of the Government department.

— *Norges Offentlige Arbeidsformidling. Kristiania Arbeidskontor, 1916.* 19de årsberetning.

This is the nineteenth annual report of the Christiania branch of the Norwegian Public Labor Exchange. The data presented show that during the year 1916 the number of persons applying for work, the number of applications made by employers for persons to fill vacant places, and the number of positions filled were greater than during the year 1915. Comparative figures show the annual operations of the exchange, 1898 to 1916. The following is a summary of its operations for the years 1915 and 1916:

OPERATIONS OF THE CHRISTIANIA BRANCH OF THE NORWEGIAN PUBLIC LABOR EXCHANGE, 1915 AND 1916.

Year.	Males.			Females.			Total.		
	Number applying for work.	Number of vacancies reported.	Number of persons for whom work was secured.	Number applying for work.	Number of vacancies reported.	Number of persons for whom work was secured.	Number applying for work.	Number of vacancies reported.	Number of persons for whom work was secured.
1916.....	32,072	28,223	24,286	19,126	20,549	17,219	51,198	48,772	41,505
1915.....	25,367	19,574	17,315	16,260	15,648	13,754	41,627	35,222	31,069
Increase.	6,705	8,649	6,971	2,866	4,901	3,465	9,571	13,550	10,436
Percent of increase.	26.4	44.2	40.3	17.6	31.3	25.2	23.4	38.5	33.6

During the year 1916 private labor exchanges reported that 11,916 applications from persons seeking employment were received, 12,634 positions were reported vacant, and 9,748 persons were placed in positions.

SWEDEN.—*Dyrtidskongressen* [Stockholm], 1916. *Kort redogörelse för antedningarna till dyrtidskongressens hallande, dess organisation, program och deltagare samt de vid dyrtidskongressen och vid konferensen med livsmedelsnämndernas ombud förda protokollen.* [Stockholm, 1917.] 165 pp.

This forms the report of the proceedings of a congress on the high cost of living held in December, 1916, by representatives of the Federation of Trade-unions, the Social-Democratic Party, the Central Association for Social Reform, the Swedish Cooperative Alliance. It was attended also by individuals and by representatives of the bodies interested in the problem of the rising cost of living. Several high Government officials and others were also invited. The prominent Swedish economist, Knut Wicksell, took part in the congress, as did some members of the Storting. Papers were read on the causes and effects of rising prices, the duty of the public authorities in relation thereto, and measures for their amelioration. A conference was also held between the members of the congress and representatives of the cost of living committees created by law since early in the war.

SWITZERLAND (CITY OF BERN).—*Verwaltungskommission des Arbeits- und Wohnungsamtes und der Versicherungskasse gegen Arbeitslosigkeit der Stadt Bern. Verwaltungsbericht für das Jahr 1916.* Bern, 1917. 18 pp.

The annual report for 1916 of the single administrative commission in charge of the varied activities of a public renting bureau, a public employment office, and a system of subsidized unemployment insurance for the city of Bern.

The commission reports that the war has caused increased utilization of the municipal employment exchange by employers as well as by workmen. Every new call of men to the colors was followed by increased demand for help by employers, while every discharge of troops was accompanied by an increase in the number of applicants for work. The following table indicates the activity of the employment office in 1915 and 1916:

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STATISTICS OF THE MUNICIPAL EMPLOYMENT OFFICE OF BERN, 1915 AND 1916.

	Vacant situations.		Applicants.		Situations filled.	
	1915	1916	1915	1916	1915	1916
Male.....	9,256	10,113	13,234	13,047	7,752	8,010
Female.....	4,571	5,517	5,119	5,078	2,539	2,571
Total.....	13,827	15,630	18,353	18,125	10,291	10,581
Female day laborers, laundresses, and charwomen....	2,567	2,957	2,556	2,949	2,556	2,949
Grand total.....	16,394	18,587	20,909	21,074	12,847	13,530

The municipal renting bureau received orders for the renting of 1,576 properties, and if to these are added 223 still vacant from the preceding year a total of 1,799 is made, of which 1,595 were apartments and one-family houses. The number of properties rented was 918 or 51 per cent of the total.

In the unemployment fund the commission reports a membership of 730, a decrease of 50 as compared with the preceding fiscal year. Of the total number of members, 504 were skilled and 226 unskilled workers. A proposal of the commission for extension of the unemployment insurance through municipal subsidies to private employment funds was rejected by the municipal council. The latter requested the private funds to affiliate with the municipal fund, which proposal was rejected by the trade-unions. In 1915 the municipal subsidy granted annually to the fund was increased to 20,000 francs (\$3,860) and the same amount was appropriated for 1916. The contributions from the insured workmen amounted to 10,680.50 francs (\$2,061.34), which approximately equals the regular annual municipal subsidy. Up to the end of the fiscal year 429 members, as against 446 in 1915, had received unemployment benefits. Of this total number 303 were skilled and 126 unskilled workmen. Skilled workmen while unemployed received 3 francs (58 cents) daily, if married, and 2 francs (39 cents) if single, while unskilled workmen were given 2.50 francs (48 cents) and 1.50 francs (29 cents), respectively. Only 16 of the insured members received benefits for the maximum period of 60 days. The total amount disbursed for cash benefits was 27,524.25 francs (\$5,312.18).

UNOFFICIAL.

BROWN, WALTER H. AND SIMPSON, CHARLES E. *Human anthrax: Report of an outbreak among tannery workers. Reprint from Journal of American Medical Association. Chicago, 535 North Dearborn Street. 1917. 11 pp.*

A report on 25 cases of human anthrax, reported to the Massachusetts Department of Health within four months and constituting the most severe outbreak of this disease ever recorded in that State, by officers of the departments of health of Connecticut and Massachusetts.

CLEVELAND CHAMBER OF COMMERCE, COMMITTEE ON LABOR DISPUTES. *Violence in labor disputes. Third report, covering period January 1, 1916, to January 31, 1917. Cleveland, Ohio, March 7, 1917. 23 pp.*

CROSTHWAITE, H. R. *Cooperation: Comparative studies and the Central Provinces system. Printed and published by Thacker, Spink & Co., Calcutta, for the Central Provinces Federation of Cooperative Banks. 1916. 542 pp.*

GARTON FOUNDATION (GREAT BRITAIN). *Memorandum on the industrial situation after the war. London, Harrison & Sons, October, 1916. 96 pp. Price 1s. net.*

The work of a group of men of widely varied views, in touch with the capitalist and employing classes, with organized labor, and with financial, economic,

and administrative circles, who have carefully analyzed the British industrial situation, and conferred and corresponded with representatives of all parties to industry. The memorandum compiled by these men was privately circulated among employers of labor, leaders of working-class opinion, and persons prominent in the discussion of economic and social questions, and many of the criticisms and suggestions received have been incorporated in the memorandum as now made public.

As a result of their inquiry the authors became convinced "that the return from war to peace conditions would inevitably involve great difficulties, which might result, if not carefully and skillfully handled, in a grave outbreak of industrial disorder." The various constructive measures proposed are well presented, and include the joint committees and industrial councils advocated by certain other students of the industrial problem.

INSURANCE PUBLISHING Co. (LTD.). *National Insurance Year Book, 1917*. 85 Fleet St., London, E. C., 1917. 460 pp. Price 6s. net.

The year 1916, in which was authorized and made the investigation by a departmental committee of the finance and administration of approved societies, was a year of preparation for the alteration and simplification of the National Insurance Acts of Great Britain. The present volume includes the reports of that committee, the various acts, regulations, orders, and circulars issued during the year, and other matters related to the social insurance system.

JOINT BOARD OF SANITARY CONTROL. *Seventh annual report of the Joint Board of Sanitary Control in the cloak, suit and skirt, and the dress and waist industries*. 31 Union Square, New York City, 1917. 16 pp. Illustrated.

This board, organized in 1910, has jurisdiction over the cloak, suit and skirt, and the dress and waist industries in New York City, covering 2,547 separate shops employing 73,985 workers (40,962 males and 33,023 females), its functions and activities embracing safety and fire protection of buildings, fire protection in buildings and shops, sanitation, education, first aid and nursing, and medical and dental services. This, the seventh annual report, notes that an inspection of 740 buildings in April and May, 1917, disclosed 215 buildings over six stories high with no fire-alarm systems, 223 with only one stairway, and 200 with no fireproof inclosures or stairways. Fire drills were conducted in shops giving employment to 56.7 per cent of the workers. About 3,700 inspections and 5,700 reinspections were made, and the report states that "it is very rarely necessary to resort to any extraordinary measures to compel the owners of the shops to remedy sanitary defects found by the inspectors." Examinations made in the medical office of the board showed about 2 per cent of men and 0.5 per cent of women to be suffering from pulmonary tuberculosis. However, the report suggests that not all of these are in a stage of the disease that is infectious or in any way dangerous to their fellow workers or to the produced garments.

"Tuberculosis benefits" were established in 1913 by several of the locals of the unions by which a pension of \$200 to \$250 is allowed to each member suffering from pulmonary tuberculosis in its infectious stage, and he is sent to his home or to a sanatorium at the expense of the union. About 150 members of the three unions providing such benefits have been aided since 1913.

LABOR COPARTNERSHIP ASSOCIATION. *Copartnership organization of labor*. By E. W. Mundy, secretary of the Labor Copartnership Association. 12 pp. 30th report, 1915. 32 pp. 31st report, 1916. 4 pp. 6 Bloomsbury Square, London W. C.

The first pamphlet is issued by the copartnership educational committee, and sets forth the general plan of the Labor Copartnership Association, which

is made up of copartnership productive societies, that "are working-class organizations carried on with careful attention to the welfare of the workers, as well as to the production of honest goods at a fair price. These societies are, in fact, an attempt to harmonize the interests of producer and consumer, with due regard also to the claims of the holder of capital. Speaking broadly, this is achieved by using the profits of the business to pay a fixed rate of interest (usually 5 per cent) on share capital and build up a reserve; secondly, by paying a dividend on purchases to the consumer; and thirdly, by paying a dividend on wages to the workers, as well as forming educational and provident funds to aid their welfare."

The report for 1915 indicates the transactions of these societies during the years 1911 to 1914, as follows:

TRANSACTIONS OF THE LABOR COPARTNERSHIP ASSOCIATION IN GREAT BRITAIN,
DURING THE YEARS 1911 TO 1914.

Item.	1911	1912	1913	1914
Number of societies.....	86	84	81	78
Capital.....	\$9,441,365.25	\$10,068,574.37	\$11,047,334.59	\$11,670,358.52
Extent of trade.....	21,126,824.52	23,035,008.37	24,569,191.96	25,322,029.78
Profit.....	1,039,450.33	1,099,293.69	1,196,068.90	1,358,512.67
Loss.....	24,624.49	10,389.98	10,151.52	17,071.68
Dividend on wages.....	144,174.93	145,342.89	163,334.34	170,351.83

The report for 1916 does not give a statement of the transactions for 1915 but presents a table giving the particulars of copartnership and profit-sharing in 38 gas companies, which shows a total of 25,550 employees under agreement for profit sharing or copartnership; a total of £60,228 (\$293,099.56) as dividends to employees for the year 1916; a total of £1,386,272 (\$6,746,292.69) as the profits to employees since the scheme was adopted (extending over an average of nearly eight years); and a total of £872,283 (\$4,244,965.22) as the amount of shares and deposits held by employees in these companies, based on the market value on December 31, 1916.

MERRIN, J. *Pressing problems: A brief study of some of the more urgent social problems of the day.* London, Society for Promoting Christian Knowledge. 1915. 286 pp.

Written from the author's experience as incumbent of various populous parishes of London and bearing a foreword by the Lord Bishop of Chelmsford.

NIEDERER, EDUARD. *Das Krankenkassenwesen der Schweiz und das Bundesgesetz vom 13. Juni 1911.* (Zürcher Volkswirtschaftliche Studien, 9. Heft.) Zürich and Leipzig, 1914. 303 pp. 11 tables.

With the enactment of the Federal Sickness and Accident Insurance Law of June 13, 1911, a new era began for the Swiss system of sickness insurance. Statistics compiled by Prof. Kinkelin and by the Swiss Industrial Department show the varying manner in which the carriers of the sickness insurance have endeavored to do justice to their task and furnish the data required to give information on important problems of the insurance technique.

The present work of Dr. Niederer describes the organization of the individual sick funds and, so far as this is possible, gives monographs of these funds. The principal sources of material for this volume were the by-laws and annual reports of the funds which since 1903 have been collected by the Swiss Industrial Department. In addition the author mailed to the various funds a questionnaire with 33 questions, the replies to which enabled him to compile uniform data as to the by-laws of about 1,300 funds.

The text part of the volume is followed by 11 tables giving general and sickness statistics of several federations of Swiss sick funds and of some large individual sick funds.

RUSSELL, GEORGE WILLIAM. (A. E., PSEUD.) *The national being: Some thoughts on an Irish polity.* Dublin and London, Maunsel, 1917. 176 pp.

SCHINDLER, P. AND GÖTZE, H. *Ergänzungsband für das Jahr 1915 zu dem Jahrbuch der Arbeiterversicherung 1914.* Berlin, 1915. XLII, 601 pp.

A supplementary volume for 1915 to the yearbook on German workmen's insurance published by the same authors for 1914, a handbook in general use by officials and officers of the German workmen's insurance system. The present volume shows the organization of the insurance authorities and for all three branches of the insurance system (sickness, accident, and invalidity insurance) the organization of the insurance carriers, the principal provisions of the workmen's insurance code with annotations, subsequently enacted regulations for the application of the code, the local wages for day labor, and the customary annual wages of agricultural and forest laborers legally determined for the various insurance districts.

SNIVELY, EDWARD T. *The boy and the school: A partial survey of the public schools of Fort Dodge, Iowa.* Bulletin 32. Engineering Extension Department, Iowa State College of Agriculture and Mechanic Arts. Ames, Iowa, Aug. 15, 1917. 19 pp.

This report is noted on pages 161 to 163 of this issue of the MONTHLY REVIEW.

SOCIETY OF COMPARATIVE LEGISLATION. *Journal*, Vol. xvii, Part 2, July, 1917. London, 1917. 236 pp. Price 6s.

This volume is devoted entirely to a review of legislation enacted in 1915 throughout the British Empire, and in Denmark, France, Italy, Sweden, and the United States.

STERN, FRANCES AND SPITZ, GERTRUDE T. *Food for the worker: The food values and cost of a series of menus and recipes for seven weeks.* Boston, Whitcomb & Barrows, 1917. 131 pp. Price \$1 net.

A book based on the generally acknowledged standards of scientists and the knowledge gained by the authors through working among families of limited incomes. The food supply has been estimated for a family comprising man, woman, and three children ranging from 8 to 16 years of age.

STONE, GILBERT, ed. *Women war workers. Accounts contributed by representative workers of the work done by women in the more important branches of war employment.* New York, Crowell, 1917. 320 pp. Illustrated.

An account of women's work in Great Britain in munitions making, farming, the postal service, banking, street railways, merchandise delivery, nursing, industrial welfare, etc. The book includes a chapter on war organizations for women, with addresses, objects, and attainments.

VERBAND DER ÖFFENTLICHEN ARBEITSNACHWEISE DES KÖNIGREICHS SACHSEN. *Niederschrift über die IV. Verbandsversammlung den 31. Juli, 1915, in Leipzig.* Leipzig, 1915. 51 pp.

The minutes of the annual meeting on July 31, 1915, of the federation of public employment offices of the Kingdom of Saxony. In presenting the annual report for 1914 to the meeting the president of the federation stated that 29 employment offices were affiliated with the latter. The activities of the affiliated offices had considerably increased during the year, 117,291 applicants of both sexes having been placed in employment, as compared with 86,488 in the preceding year, an increase of about 36 per cent. The president emphasized the fact that this increase is largely due to more extensive interbureau work and placements outside of the particular district covered by any bureau. In

1913 placements through interbureau work totaled 10,108, or only 12 per cent of all placements, while in 1914 they totaled 38,351, or 32.7 per cent. It should, however, be mentioned here that this increase of placements outside of the local districts is not always due to normal demand for labor but to large transfers of labor for military purposes; for instance, 28,316 workmen were sent to East Prussia to assist in fortification work.

The president of the federation stated also that in 1914 employment offices not affiliated with the federation experienced only a small increase in their activities, or even a decrease. The number of placements of employment offices maintained by workmen's associations increased from 18,270 to 18,864, while those of equi-partisan (*paritätische*) employment offices decreased from 14,542 to 13,370, and those of employers' associations from 79,548 to 75,786.

COSENS, MONICA. *Lloyd George's munition girls*. London, Hutchinson [1916] 160 pp. Price 1s. net.

A first-hand account by a "war volunteer" of the work of women in a British munitions plant, and an interesting record of conditions.

WALTON, CECIL. *Welfare study: What it is*. Glasgow, Maclure, Macdonald & Co. [1917] 24 pp. Illustrated. Price 6d. net.

A brief for industrial welfare as practiced in Great Britain. "It may be a great movement developed by war conditions, its importance may have been emphasized because of the creation of an industrial army of women; but the end of the world war will not see the end of welfare—it has come to stay."

WAR STUDY SOCIETY (SELSKABET FOR SOCIAL FORSKEN AF KRIGENS FØLGER). *Bulletin No. 1, March 1, 1916. The cost of war. 52 pp. Bulletin No. 2, August 1, 1916. Human losses in the war. 33 pp. Bulletin [No. 3], May 1, 1917. Fluctuation of the populations during the world war: 1. Germany and France. 141 pp. Copenhagen.*

These are bulletins issued by the Society for the Study of the Social Consequences of the War, Denmark. The first bulletin gives an estimate of the war expenditures of the belligerent countries during the first year and attempts to estimate the cost during the second year. The second bulletin presents figures showing as nearly as can be ascertained the direct losses in men suffered by the various armies. The report does not consider such questions as the great mortality among prisoners of war, the loss of human life among the civil population on the battlefields, the mortality among refugees, the mortality among the civil population generally, the extent of disease in the armies, and the great reduction in the number of births. Summarized, it may be stated that during two years of war the losses of ten belligerents are estimated by the society as: Dead, 4,631,500; wounded, 11,245,300; invalids, 3,373,700. Bulletin No. 3 takes up some of the questions omitted from the preceding bulletin, notably the mortality among the civil population generally and the great reduction in the number of births, the data, however, being confined to Germany and France. A study of these two questions, it is thought, will show how great are the changes which have taken place in the populations during the war.

WEBB, SIDNEY. *The restoration of trade-union conditions*. New York, B. W. Huebsch, 1917. 109 pp. Price 50 cents net.

Predicts the absolute impossibility of fulfilling the pledge made to British labor that every employer shall, after the war, "reinstatement the working conditions of his factory on the prewar basis;" mentions the dangers of a "sham restoration" of which labor would have reason to complain throughout a generation; and proposes an industrial charter, which is described in detail, for the joint administration of industry by employer and employees.