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CAN SERIOUS INDUSTRIAL ACCIDENTS BE ELIMINATED?

BY LUCIAN W. CHANEY AND HUGH S. HANNA.

Perhaps the most interesting inquiry regarding industrial accidents concerns the extent to which they may be prevented. Is it reasonable to look forward to a time when accidents will be so few as to be negligible, or must we contemplate always having a huge yearly toll of deaths and injuries in industry?

The prevailing belief is that it is hopeless to think of anything like the elimination of accidents, at least within a measurable time. But the results of a recent study of accident causes in the iron and steel industry[1] pointedly suggest that the current belief may be erroneous—that, while it may not be possible to do away with accidents, it is quite practicable to make industry so safe that fatal accidents and other serious accidents will be of exceptional occurrence.

This conclusion is the result of a careful analysis of the accident experience of the iron and steel industry, but in a broad way it would seem applicable to all industries. The premises upon which the conclusion is based may be summarized as follows:

1. Up to very recently emphasis has been placed primarily upon the frequency of accidents rather than upon their severity. The vast majority of accidents occurring in the iron and steel industry are of a minor character. Thus, even when injuries of under a day's duration are excluded, more than 50 per cent of all the injuries reported caused disabilities terminating in less than one week. But from the standpoint of time lost these minor injuries were much less important than the small percentage of more serious injuries. The accidents resulting in death, although constituting only about 1.5 per cent of the total number of accidents, caused a total loss of time amounting to more than 65 per cent of the total time losses caused by accidental injuries. In order to arrive at the amount of time lost it is necessary

[1] To be presented as a chapter of a forthcoming bulletin of the United States Bureau of Labor Statistics on accidents and accident prevention in the iron and steel industry.

to express fatal injuries and permanent disabilities, as well as temporary disabilities, in terms of workdays lost. This is done by valuing a fatal injury (assuming the employee killed of an average age of 30 years) as equivalent to the loss of 30 years' work time—9,000 days. Permanent total disability is placed at 35 years, or 10,500 workdays, such disability involving a greater burden to relatives and the community than death. Lesser permanent injuries—such as loss of hand or foot—are credited with lower time losses in proportion to their probable effect upon earning capacity—2,196 days for a hand, 1,845 days for a foot, etc. The severity rate is the number of days lost per annum per 300-day worker—that is, one who works 300 days a year, 10 hours per day, or 3,000 hours per annum.[1]

2. The safety movement has dwelt unduly upon the carelessness of the worker and has stressed too little the importance of safe tools, safe machines, safe practices, and safe construction. Carelessness and ignorance on the part of the worker are undoubtedly responsible for many accidents but chiefly for the accidents of a minor character. It is this fact that places definite limitation upon the safety organization idea as usually practiced. With its committees, its publicity methods, its quickening of foremen and workmen to an active interest, safety organization has been tremendously effective in the reduction of minor accidents.

Because the success of organization methods in reducing accident frequency was so great, it came to be regarded as the explanation not only of the decrease in frequency of accidents but also as accounting directly, by immediate effect on the workmen, for the decrease in fatal and serious accidents. This belief took root the more readily since the idea that accident is largely due to the reckless behavior of the workman is an ingrained notion inherited from the days when the slightest "contributory negligence" barred the victim from recovery. It may be said that if personal carelessness could be entirely eliminted the effect upon the number of fatal and serious accidents would not be great so long as the structural engineering and organization defects are left unchanged.

3. Fatal accidents and serious accidents, as appears from the present study, are primarily due to fundamental engineering or structural defects in which the workman has no part. The reduction in the rates of death and severe injury has been due primarily to engineering revision of structure and practice, and it is in that direction that real progress lies.

In thus using the term "engineering revision of structure and practice" as expressive of the fundamental remedy for severe acci-

[1] For a full explanation of severity rates see the MONTHLY REVIEW for July, 1916, pp. 6–17.

dent, the meaning of the term must be clearly understood. By "engineering revision" 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. Safety men are themselves hardly aware how great are the changes which have taken place in their own plants in these particulars. The changes have come about gradually, and to the man who has been in contact with the slow modification the contrast is much less striking than to one who returns after an interval and notes the transformation.

The first attack of the safety movement was upon unguarded machines. Exposed gears were covered, belts were fenced, and other things of similar character done. This came to be known as "mechanical safeguarding." Its results were rather disappointing. The machine when closely studied did not prove to be as important in causing accident as it had been supposed to be. At the same time that "mechanical safeguarding" was being tried and found somewhat wanting, the committee system was inaugurated, and the system now known as "safety organization" was coming into being. This appealed strongly to the human factor. The success in reducing accident frequency was immediate and extraordinary. The natural result was to concentrate attention upon organization as the chief factor in accident prevention. The contribution from what is here called "engineering revision" fell somewhat into the background. "Mechanical safeguarding" was given an extension of meaning to include in many minds these broader engineering problems. Since such "safeguarding" had not realized the returns which were expected from it, the results of the application of engineering skill were somewhat clouded by the idea that they rested upon nothing more than a form of "mechanical safeguarding." This presentation is designed to show that the appeal to the human factor is not sufficient for the control of serious accidents. For that, reliance must be upon adequate "engineering revision."

A considerable body of facts in support of the above line of reasoning has been obtained, and evidence of particular importance is offered in the following analyses of (1) the accident causes in several departments of the iron and steel industry over a period of years, (2) the accidents causing death, and (3) the nature of the injuries causing death.

ACCIDENT CAUSES BY DEPARTMENTS OVER A PERIOD OF YEARS.

Blast furnaces.

A careful examination of the course of accident rates in certain blast furnaces from 1905 to 1914 indicates that the major part of the reduction in severity rates which took place was due to structural and mechanical improvements in the department. Thus, hot metal "breakouts" contributed far more than any other cause to the severity rates. From 1910 onward this cause disappears. Its disappearance was due to the completion of structural improvements which increased the resistance of the furnaces to such an extent as to eliminate the breakouts.

Second in importance as a cause of serious accident in the earlier years was asphyxiating gas, breakouts and gas together furnishing 56 per cent of the severity rate of 1906. The danger from gas has also been controlled mainly by structural improvements, such as carrying the gas mains high in the air and providing more effective control by means of improved valves. In addition, the introduction of protective devices such as oxygen helmets and of resuscitation apparatus must be credited with a considerable portion of the reduction in the severity rate.

When examination is made of the accident rates for those causes which are more affected by personal care on the part of the worker, it is evident that while accident reduction of great importance has occurred, it does not approach in significance that arising from the control of the causes above mentioned, which must be met by engineering revision. For example, falls of worker may be regarded as greatly influenced by personal care. In these blast furnaces the severity rate reduction was 1.9 days (i. e., from 7.5 to 5.6 days lost per 300-day worker) between 1906 and 1913. This may be compared with a reduction of 58.9 days lost in the case of injuries due to hot substances (i. e., from 60.8 to 1.9 days) and a reduction of 10 days lost (i. e., from 15.4 to 5.4 days) in the case of injuries due to asphyxiating gas.

Even these statements do not present the case fully. In the early days there were one or two deaths annually from falls of painters engaged upon the stacks or stoves. The provision of a suitable sling and seat for painters has entirely eliminated such deaths. Even in injuries due to falls of worker, depending, as suggested, a good deal upon personal care, a considerable portion of the reduction of 1.9 days lost was due to mechanical contrivances, such as safe ladders, and to the elimination of structural defects which made accident inevitable. Reducing injuries due to the handling of tools and objects is largely dependent upon personal care. The reduction in the

severity rate from this cause was only 7.3 days, between 1906 and 1913, an amount of relatively small importance when compared with the rate of reductions for injuries due to hot substances and gas. No inconsiderable part of this reduction must, however, be credited to better tools and greater care by the shop management in furnishing safer tools and keeping them in proper condition.

In the blast furnaces studied, therefore, striking success in reducing the severity of accidents is found in those causes to which engineering revision has been applied. Their experience strongly suggests the overwhelming importance of fundamental improvements in physical conditions.

Open-hearth furnaces.

In the open-hearth department, injuries caused by cranes and hoists show high severity rates in the earlier years, particularly in 1907. This was due almost entirely to the structural defects then prevalent, such as absence of footwalks, poor access to the crane cage, overhung gears, and others. By 1911 these defects had been largely corrected in the mills studied and from that time severity rates dropped markedly and continuously.

In injuries caused by hot substances, explosions other than ingot are the main cause of the early high severity rates. It is obvious that the carefulness of the individual workman can do little to prevent such explosions. When they occur some workmen are inevitably killed or injured more or less severely. There is rarely any warning to enable those exposed to escape. The lessened severity rate of recent years is mainly due to revisions in structure and in method which were primarily introduced to favor production. They both lessen the likelihood of explosion and protect the worker when explosion comes. These structural revisions have not been rated at their true value from a safety standpoint because, as stated above, they are almost all related to production.

The reduction of the severity rate for injuries due to power vehicles must be largely attributed to improved transportation facilities and improved methods of operation.

The cause groups noted above, cranes and hoists, hot substances, and power vehicles, are clearly influenced largely by engineering revision. The result of the application of engineering methods is seen in the figures which follow. These cause groups combined declined in severity from 47.5 days per 300-day worker in 1907 to 8.3 days in 1912, a reduction of 83 per cent. In cause groups in which personal care is a larger factor the decline was only 13 per cent. In fact in one such group, "handling tools and objects," the severity rate actually increased.

If frequency is considered the showing is very different. The cause groups dependent upon engineering improvement declined in frequency rates from 117.8 cases per one thousand 300-day workers in 1907 to 64.5 cases in 1912, 45 per cent, while "handling tools and objects" declined from 195.5 cases to 92.3 cases, 53 per cent. On the basis of frequency personal care has decidedly the better record. How completely this record is reversed when severity is considered is emphasized when it is remembered, as noted above, that while "handling tools and objects" was making the marked decline of 53 per cent in frequency, the severity increased 17 per cent.

Rolling mills

In heavy rolling mills the only cause of injury about which it is possible to make a positive statement is cranes and hoists. The reduction in severity rates recorded is very largely due to better cranes, better chains, and improved methods of operation.

Of tube mills it may be said that the lessened severity rates may very properly be attributed in large measure to the effects of increased personal care. The operations of such mills afford many opportunities to eliminate moderately severe accidents by that means. The occurrence of fatality is so rare that conclusions regarding its occurrence are not warranted.

Miscellaneous departments.

In plate and sheet mills, in the mechanical department and in the fabricating shops, it is difficult to decide which factor—personal care or engineering revision—has the greater importance. Since many of the operations are of a personal and manual nature it is fair to attribute much importance to individual care. Making due allowance for this it still appears that in cases of high severity rates due to fatality these fatalities are almost invariably the result of some structural defect admitting of remedy.

Yards.

In the yard department injuries caused by hot substances show a remarkable decline in severity rates. Nearly all of this is attributable to improved methods of transporting hot metal. When the power vehicle as a cause of accident is studied it becomes evident that the introduction of automatic couplers, the provision of adequate clearances, improved loading methods such as the use of magnets, better signaling systems, and elimination of grade crossings,

have influenced the severity rates at least equally with and probably more than increased personal care.

Importance of organization.

This review of the several departments sustains very decidedly the contention that the effect of personal care appears mainly in reduced frequency rates and that engineering revision is reflected more largely in the decline of the severity rate. There must be no misunderstanding of this contention. It does not diminish the importance of organization. In an important respect it increases it materially. Organization and the interest it evokes lead to the discovery and remedy of structural defects. Without organization the revision so far accomplished would never have occurred. The facts here pointed out regarding experience in the various departments emphasize the importance of directing organization more vigorously to the discovery of faulty structure. Open and obvious faults have been noted, and it is becoming constantly more and more a matter of the most intensiye engineering study to discover and remedy the less obvious faults. This goes beyond the province of many safety men. They should demand with increasing insistence the help of the best engineering skill.

ANALYSIS OF CAUSES OF FATAL INJURIES.

Because of the extreme seriousness of fatal accidents from the economic standpoint it is of particular importance to examine their causes with the view of placing the responsibility for their occurrence. Data for this purpose were available for 372 cases of death. These occurred in plants having a total exposure of 247,038 300-day workers, the fatality rate thus being 1.51 per one thousand 300-day workers. As the fatality rate for the whole industry for the years 1910 to 1914 was 1.20 cases per one thousand 300-day workers it is evident that the plants here concerned were in no way exceptional. The following table lists these 372 death cases by causes.

Causes of 372 cases of fatal injury in the iron and steel industry, 1910 to 1914.

Engines, motors, etc	3
Transmission gear	3
Working machines:	
Adjusting	2
Operating	2
Oiling and cleaning	2
Repairing	5
Objects flying	4
Miscellaneous	2
Total	17

Cranes and hoists:	
Operating	1
Oiling and cleaning	3
Repairing	3
Breakage	7
Falling loads	23
Hoisting and lowering	8
Miscellaneous	32
Total	77
Hot substances:	
Electricity	16
Explosions	12
Hot metal	15
Hot metal flying	25
Flames	5
Miscellaneous	3
Total	76
Falling objects:	
Collapse of building, etc	9
Stored or piled materials	7
From trucks or vehicles	3
From buildings, scaffolds, etc	4
Miscellaneous	27
Total	50
Falls of worker:	
From ladders	5
From scaffolds	6
From vehicles	1
From structures	20
From other elevations	4
Into other openings	3
Miscellaneous	6
Total	45
Handling tools and objects:	
Tools in hands of worker	1
Loading and unloading	3
Objects from flying tools	1
Total	5
Power vehicles	57
Miscellaneous:	
Flying objects not otherwise specified	4
Asphyxiating gas	19
Heat	4
Moving objects not otherwise specified	6
Miscellaneous	6
Total	39
Grand total	372

It is necessary to state the principles upon which the interpretation of these death cases rests.

First. It is assumed that it is the primary duty of the safety man to make conditions safe rather than to educate the men to avoid unsafe conditions over which they have no control. In considering any given case, if it appears that the immediate cause of the accident was some weakness in an appliance, or faulty construction, or poor arrangement, which, if remedied, would have prevented the injury, no amount of so-called "contributory negligence" on the part of the man is considered sufficient to transfer the responsibility to him.

Second. The fact that an apparatus can be used with entire safety by the exercise of special care is not regarded as excusing the failure to provide safer apparatus. For example, a ladder without safety feet may be used on a hard floor by taking certain precautions. If a man fell and was killed under such circumstances the unsafe apparatus is regarded as the point to be considered rather than the failure to take the possible precautions.

Third. The costliness of remedying structural defects, even to the extent of entirely reconstructing a mill, should not bar its consideration. An illustration of the principle may be drawn from the case of the wood planer. In the old type of this machine a revolving cutter was used which would sometimes take off an entire hand. This has now been replaced by a cutter which may inflict a painful, but can not inflict a serious, wound. This is a notable advance, but it is possible to go farther, since an automatic feed has been devised for such planers which makes injury impossible. The expression "prohibitive cost" is heard from time to time in the discussions of safety men. It is the contention in this discussion that if this element of cost is entirely disregarded serious and fatal injury can be very largely eliminted. The objection will be raised that this is an ideal impossible of attainment. The condition urged is ideal, but not unattainable. If an industry or plant can be made safe only by prohibitive expenditure, in reconstruction, it is a question whether that industry or plant should be permitted to continue maiming and killing workmen in order that profits may continue.

The cause groups of the table will now be followed and commented upon in the order in which they appear:

Engines and motors caused three deaths. Two of these could have been avoided by the guarding or removal of projections on the moving parts.

Transmission gear caused three deaths. Two of these were due to projecting set screws on shafts.

In working machines, 9 out of 17 deaths were due to mechanical or other conditions which should have been remedied and over which the operator had little or no control.

Cranes and hoists were the cause of the largest number of fatalities—77. One which occurred in operating a crane was due to some defect in the electrical control of the crane. Three which were of oilers were attributable to the necessity of approaching moving parts not properly guarded. Seven due to breakage were all preventable by proper design or greater strength. Of 23 due to falling loads, some weakness in the crane, imperfect chains, faulty signals, or some other condition which the management should have improved, was a factor in all but one. Some of these involved an element of contributory negligence, but if this had not been combined with mechanical defects no accident would have occurred. Miscellaneous causes incident to cranes and hoists contributed 32 cases, of which 10 were clearly due to defects such as absence of foot walks and of proper means for reaching the crane cage. To sum up, 43 out of 77 cases in the operation of cranes and hoists could have been prevented by better design in the crane and such operating methods as now prevail. It may be strongly suspected that into the other 34 causes there entered not infrequently elements of unsafe practice or imperfect structure for whose presence the workers were not responsible and which no education of them could remove.

Hot substances caused 76 fatalities. Sixteen of these were due to electric burns, and of these 13 were preventable by the kind of construction now in common use in electrical installation. Of 12 deaths due to explosions, 7 were of a kind which could scarcely occur at present with the improved modern practices. Hot metal caused 15 deaths, and in 14 of these bad method or imperfect structure had a part. For each condition under which these 14 cases occurred an effective remedy has been found. Of 25 deaths due to hot metal flying, 18 would probably not have occurred under the latest improved practice. It should be emphasized that this does not mean teaching the men caution. It means a correction of faults in the apparatus and in methods of using it. Not less, therefore, than 52 out of the 76 deaths due to hot substances presented problems of revision of structure and methods.

Of 50 deaths due to falling objects 29 were preventable by appropriate structural changes.

Falls of worker caused 45 deaths. Of these 22 might have been prevented by better scaffolds, stairs, platforms, railings, and other structural provisions which are now regarded as a matter of course.

Of 57 deaths due to power vehicles 34 were the result of causes such as the following: Failure to install automatic couplers, inadequate clearance between cars and buildings, grade crossings upon which men could come without being able to see the approaching locomotive, bad signal systems which permitted cars to be shunted

down upon standing cars under which men were at work, and absence of proper grab irons for getting on and off cars. None of these present any insuperable difficulties to the engineer.

There were 19 deaths from asphyxia. All of these were related to imperfect gas mains, unventilated inclosed spaces, leaky valves, and other conditions involving changes in the apparatus.

To summarize this examination, 212 out of 372 deaths, i. e., 57 per cent, could have been prevented by some engineering revision. This can be said without qualification. It can not be said that all the other 43 per cent would have been amenable to educational methods in response to which caution would insure safety. In only about 10 per cent of these deaths would it be safe to say positively that the man's own carelessness clearly appears as the major factor. In the remainder either no conclusion is justified by the record or there is a mixture of contributory negligence with possible structural imperfection impossible to untangle.

The above compilation of fatal injury cases represents a combination of data for the years 1910 to 1914. It is of interest to compare with it a body of material, recently received by the bureau, for a group of plants for the year 1916, that year being one of extraordinary activity in the industry. In this group of mills, with 84,305 300-day workers, 72 deaths occurred. This is at a rate of 0.86 cases per 1,000 workers as against the rate of 1.51 for the preceding group for the years 1910 to 1914. This lower fatality rate represents a distinct improvement, the probable result of very extensive structural revision made by these plants. In spite of this improvement, however, an analysis of the 72 death cases indicates that at least 58 per cent of them involve elements of structural defect or improper operative methods.

ANALYSIS OF THE NATURE OF INJURY IN FATAL CASES.

Further light upon the possibility of reducing the number of serious accidents may be derived from a study of the nature of the injury causing death. This is desirable also because the consideration of rates and distribution from year to year comes to have a rather formal interest and fails to give due emphasis to the vital importance of these cases.

The nature of the injury causing death was available in 956 cases. In the following table they are distributed according to the nature of the injury and the part of the body affected.

NATURE AND ANATOMICAL LOCATION OF INJURIES CAUSING DEATH IN 956 CASES IN THE IRON AND STEEL INDUSTRY, 1905 TO 1914.

Nature of injury.	Anatomical location of injury.						
	Head, general.	Skull.	Scalp.	Face.	Neck.	Back.	Chest.
Bruises, cuts, lacerations, and punctures	3				1	2	5
Bruises, etc., with infection	1		6	1	1	1	1
Burns and scalds				1		8	74
Concussions	5						
Dislocations					1		
Fractures		218		3	20	13	220
Traumatic dismemberment	[1] 4						
Total	[1] 13	218	6	5	23	24	300

Nature of injury.	Anatomical location of injury.							
	Abdomen.	Pelvis.	Arm.	Hand.	Leg.	Foot.	Not located.	Total.
Bruises, cuts, lacerations, and punctures	26							37
Bruises, etc., with infection			1	4	2			18
Burns and scalds	26		2		19		[2] 6	136
Burns, etc., with infection				1	1			2
Concussions								5
Dislocations								1
Fractures		33	6		65	7		585
Fractures, with infection			1	1	1			3
Traumatic dismemberment			6		[3] 9	4	1	24
Asphyxia							71	71
Electrocution							23	23
Heat exhaustion							7	7
Miscellaneous	3				1	1	39	44
Total	55	33	16	6	[3] 98	12	[2] 147	956

[1] Includes 2 cases of decapitation caused by hot rod.
[2] Includes 4 cases of cremation by falling into a furnace or being covered by molten metal.
[3] Includes 1 case of dismemberment caused by hot rod.

The largest group in the table is that of fractures. When severe enough to cause death these involve nearly always an element of crushing injury. When the cases are closely studied there is found to be in a majority of them—it is impossible to determine the exact number—some indication of faulty structure which might have been remedied. For example, a man's life is crushed out between a moving car and a post beside the track. What was needed to make him safe? Six inches more of space—easy, almost costless, to give at the time of building, but looking so difficult and costly after construction is finished that it is not provided until after the man is killed.

Next in importance to fractures are burns and scalds, with 136 cases. Of these the most striking are 4 cases of cremation, 1 due to falling into a furnace, 3 to being overwhelmed by molten metal.

In the cremation cases due to molten metal, rearrangements were worked out after the catastrophe which tend to lessen very much the chance of a recurrence of such an accident. In a large proportion of the less striking cases some structural improvement, lessening the danger, has been made subsequent to the accident.

The fact that infection was formerly a very serious menace is attested by the fact that 23 deaths occurred in which without this complication there would very likely have been recovery. None of the injuries in which it figured were in themselves of sufficient seriousness to cause death. This emphasizes very strongly the great value as a life saver of adequate emergency treatment with sufficient insistence upon it to secure prompt report of even slight injury.

The 23 cases of electrocution were largely needless. They represent faulty installation or a method of doing work which should not be tolerated. The same statement is in a measure to be made regarding 71 cases of asphyxia. Sufficient care in construction and in methods of work would do away almost entirely with this death hazard.

Finally, 24 cases are presented which afford a startling climax to this presentation. These are cases of traumatic dismemberment, in which arms, legs, or heads were burned, sheared, or forcibly torn from the body. Of the 9 cases of legs so lost one leg was burned off by a hot rod in a rod mill. The feet lost were ground off in the exposed gearing of the transfer tables of rolling mills. Four decapitations are recorded. Of these two were due to being caught by the hot rod loop in the rod mills; the other two were the result of power vehicle accidents.

The question of the reasonableness of the costliest efforts to render such events impossible can scarcely be debated. It is but just to say that in many cases efforts have been made with small regard to cost and that usually such efforts have been successful. The larger proportion of the striking cases in the table above belong to the earlier portion of the period included in the survey.

ILLUSTRATIONS OF SO-CALLED "CARELESSNESS."

The wide prevalence of the view which attributes the accident largely to the worker, when he is at best but a contributing cause, is illustrated in numerous safety manuals and safety directions. The following are taken from recent publications. The cases listed were all cited as illustrations of carelessness on the part of the worker.

Case 1.—A workman in a foundry, when wheeling a barrow, passed under a heavy flask being carried by a crane. While he was in this position the chain on the crane broke, the load dropped on the man

and he was killed. This case is listed under heading "disobeying safety orders."

The man clearly contributed to his death by disobeying a rule which forbade him to walk under moving loads, and, in one view, the remedy would clearly be a renewed insistence on the rule. There is, however, another view. What was the matter with the chain? This question is the really fundamental one. The man's disobedience endangered himself only. The faulty chain endangered many men, men who were blamelessly doing their appointed tasks. It may be urged that it is not possible to produce a perfectly safe chain. In reply it may be said that recent investigation shows conclusively that there are defects in structure and in use of chains which can be removed by engineering attention. Until that is done the chain problem is the fundamental problem in all such cases as the one here listed.

Case 2.—At a point where the clearance between railway track and wall was too small for a man to stand safely, there was located an outlet for water. It was intended for no other purpose than the flushing of an adjacent gutter and the men were forbidden to get supplies from it. In spite of the order it was used from time to time because of its more convenient location instead of the more distant faucet provided. Finally a man was caught and killed. A clearer case of personal negligence could hardly be imagined. Is there anything more to say? At a slight additional expense the outlet could have been located in a safe place. No amount of negligence on the part of the men excuses a trap in which even a violator of rules may be caught.

Case 3.—An oiler was caught on a smooth shaft by some loose portion of his clothing. He had been expressly and personally forbidden to wear such clothing. It is possible to equip all shafts with bearings which render approach while the machinery is in motion wholly unnecessary.

Case 4.—A machinist who operated a planer was in the habit of using the open bed of his planer to store some of his tools. In spite of an order to the contrary he continued the practice. Finally, while reaching into the space, he slipped and fell in front of the moving platform and was fatally crushed. The expenditure of a few dollars would have closed the openings in the planer bed in such a manner that an accident of this kind would have been entirely impossible.

Such illustrations can be extended almost indefinitely. These particular cases have been chosen because the element of human imper-

fection is so perfectly clear. The tendency has been to dismiss such cases as soon as this was established or even reasonably suggested. The remedy was thought to be entirely obvious. Make more stringent rules and spur up the foremen regarding their enforcement. This is useful but superficial. In each case cited above there is an obvious engineering remedy. The constant presence of human fault must not be permitted to obscure the fundamental causes which can only be reached by the reformation of wrong conditions. In such obscurity, rules may multiply and men still die.

Summing up this survey, the following points deserve special emphasis:

The statement that "accidents can not be entirely prevented" rests to a considerable degree upon the conviction that accident occurrence is due in the main to the human factor. Since a perfect humanity is not yet in sight it is urged that results which demand perfection can not be expected. Accordingly the expression "an irreducible minimum" of accident occurrence has appeared from time to time.

If, as appears to be indicated by this study, the severity of accidents is influenced much more by engineering perfection than by human perfection the problem of cutting down the severity is quite different and much more solvable. Structures so strong, so well designed, their material so well selected, that they can not fail, except so rarely that failure is negligible, are possible, at a price. It is not a question of possible attainment but one of thought and time and money. Spend enough upon the engineering problems and serious and fatal accidents will be very largely eliminated.

What is the limit of reduction in severe and fatal cases? The possibilities of improvement in physical conditions are almost unlimited. It is possible to conceive industry conducted under conditions so safe that the occurrence of severe injury will excite the same surprise that its absence now does.

The attitude of the safety man should be that every serious accident can be remedied. Education of the workmen is not sufficient. More important from the severity standpoint is the elimination of structural and engineering defects. The wise use of money directed by the best engineering skill will determine how far the campaign will go.

ACCIDENT ELIMINATION AND COMPENSATION COSTS.

The argument advanced above has a very evident and very important bearing on the matter of accident compensation. If it is true that serious accidents may be practically eliminated at a sufficient expenditure of thought and money, there will result an enormous saving in the cost of compensation. With such a prospect in view, the most liberal expenditure on accident prevention work would be justified on strictly financial grounds, entirely aside from the question of the reduction of human suffering.

IN MEMORIAM.

Hon. Wallace D. Yaple, chairman of the Ohio Industrial Commission since 1913, died July 14, 1917.

OPERATION OF ESTABLISHMENT AND TRADE-UNION DISABILITY FUNDS.

BY BORIS EMMET, PH. D.

An investigation, the results of which are herein summarized, was undertaken by the Bureau of Labor Statistics during the latter part of the year 1916 to determine certain facts about noncommercial sickness and disability benefit funds as conducted (a) in establishments for the benefit of employees by a single firm, whether such funds are conducted solely by the employees themselves, solely by the employer or jointly by both; (b) sickness and disability funds conducted by national or international trade-unions for the benefit of either the total membership or of such members as elect to join and contribute to such funds; (c) such funds conducted as an activity of local trade-unions.

The points sought to be emphasized in this study of sickness benefit funds were the qualification for membership; the method of financing the funds; placement of management; the benefits paid; the frequency and duration of disabilities in relation both to total membership and to total actual beneficiaries; and, finally, the cost of maintenance of such funds and the percentage of such cost that goes to cash benefits to members and to administrative expense.

Owing to lack of available resources nothing like a census of such funds could be made; the investigation was therefore limited to such selected establishment and union funds as would at once represent types of funds and the industrial and trade diversity of the country. For the purpose of the study, 352 funds were selected, having a total membership of about 891,000 persons. Of these, 159 were establishment funds; that is, funds designed for the benefit of the employees of a single firm or corporation, the contributions to and control of which were either solely in the hands of the employee members, solely in the hands of the employers, or jointly in the control of both. These 159 establishment funds had about 556,000 members. Sixteen sickness benefit funds operated by national or international unions, and having 270,000 members, were studied; and 177 local trade-union funds, with 65,000 members, were carefully examined. The establishment funds covered 22 industries and the union funds covered 21 distinct trades.

In considering the figures in the tables presented in this study one should keep in mind those factors that tend to create wide discrepancies between the amount of disability reported for which

benefits were paid and the actual amount of disability. These factors, briefly, are: (1) The length of the waiting period and the maximum number of days for which benefits are paid; (2) the amount of weekly benefit; and, (3) the liberality with which the benefits are awarded and the general spirit of the scheme.

Computations regarding disabilities and costs were based upon all records available, and none of these contained any information relating to disabilities for which no benefits were paid. The tables presented do not, therefore, include cases of a duration shorter than the waiting period or of a duration longer than the maximum number of days for which benefits were paid. The bearing of the waiting period upon the results arrived at can hardly be overestimated. It was found in a number of instances that by adopting a waiting period of full seven days, more than one-half of all disability cases were eliminated from benefit payment. The influence of the maximum period for which benefits are paid is much less important than that of the waiting period, although important enough in view of the fact that a very large majority of the funds pay benefits only for three months. However long the benefit period may be, there are always to be found some cases whose duration extends considerably beyond it. The waiting period and the maximum time for which benefits are paid are shown for each fund in columns two and three of the tables on pages 22–25, 29, and 31–35.

If the benefits paid are larger than the ordinary earnings of the beneficiaries an incentive to malinger is created. Small benefits have an opposite tendency. If the amount of weekly benefit is too small to afford substantial relief, a member, though really sick, is not likely to cut off his regular income for the sake of sick benefits. The benefits paid by establishment funds average less than $7 per week, while few trade-union funds pay more than $5 per week. Because of the meager benefits paid, the records, where such exist, show low sickness rates when work is plentiful and high rates when work is slack. These records mean that a number of sick men work in prosperous times or rush seasons, and go to the hospital for treatment or for operations when work is scarce.

Still other factors have a tendency to create discrepancies between the disability reported for which benefits were paid and the actual amount of disability. These are of an administrative and psychological character. Malingering is frequently due as much to the dishonesty of the claimant as to the liberality or carelessness of the administrative methods used in the award of benefits. If the payment of benefits is made in a sort of spirit of charity, as was the case in some of the trade-union funds examined, many self-respecting legitimate claimants will frequently refrain from making claims.

An entirely opposite tendency was found in some of the establishment funds. The superintendent of a fund with a membership of many thousands stated that he was "not very strict in examining claims, because, after all, it's the men's money."

PRINCIPAL FEATURES OF ESTABLISHMENT FUNDS.

The membership of these funds consists to a very large extent of wage-earning male employees, although no distinction is made between salaried and wage-earning applicants. It is estimated that females constitute less than 10 per cent of the combined membership of all funds. About two-thirds of the establishment funds have only one class of membership. The prevailing practice in about three-fourths of the funds having classes is to base the membership classification upon the earnings of the applicants or members. When females join in large numbers a special class is usually created for them.

One-tenth of the establishment funds examined make membership in the fund an official condition of employment. In a considerable number of the remaining nine-tenths membership is optional with the employee, although, as a matter of fact, employees frequently are urged to join, making joining oftentimes a sort of unofficial condition of employment. In such instances preferment in employment or the privilege of receiving pensions is granted only to those who join. Almost one-third of the funds studied specify no definite age limits for applicants. Where provisions to this effect are found the minimum is put at between 18 and 21 and the maximum at 40 to 45.

Approximately 15 per cent of all the funds provide for a physical examination of applicants. As a rule, only large funds require such an examination, and it was found that almost two-thirds of the aggregate membership of the funds studied undergo a physical examination upon joining. In less than one-third of the funds an initiation fee of from 50 cents to $1 is charged. Some of the large establishment funds charge an initiation fee irrespective of the probable length of the membership of the prospective applicant. When the labor turnover is large and membership compulsory this results in the reduction of dues and special assessments to a minimum, in the interest of the permanent members. In the great majority of the funds, however, the bulk of the money necessary to maintain the organization comes from regular dues. These vary from 10 cents per week, the lowest, to 25 cents per week, the highest, the average being about 50 cents per month. Special assessments are resorted to only in financial emergencies. The sources of revenue referred to are supplemented in about one-half of the funds by contributions of the employers. The nature of these contributions and their bearing upon the management of the funds are shown herewith:

METHOD OF EMPLOYER'S CONTRIBUTIONS IN 124 JOINTLY SUPPORTED FUNDS, CLASSIFIED ACCORDING TO MANAGEMENT OF FUND.[1]

Method of employer's contributions.	Funds under management of—						Total.	
	Employees.		Employees and employer, jointly.		Employer.			
	Number.	Per cent.	Number.	Per cent.	Number.	Per cent.	Number.	Per cent.
Per cent of total fund receipts	14	22	29	52	1	(2)	44	35
Administration expenses	2	3	10	18	1	(2)	13	11
Specified amount per member of fund	8	12	4	7	.....	.....	12	10
Guaranty of sufficient funds	4	6	1	2	.....	.....	5	4
Specified lump sum	19	29	4	7	1	(2)	24	19
Indefinite amount	18	28	8	14	.....	.....	26	21
Total	65	100	56	100	3	(2)	124	100

[1] Existing agencies for health insurance in the United States, by Edgar Sydenstricker, Bulletin 212, U. S. Bureau of Labor Statistics, p. 456.
[2] Number too small for percentages to be significant.

In over one-half of the jointly managed funds the employer's shares were a proportion of the fund receipts. An examination of their actual contributions shows that in two-thirds of them the employer contributed less than 50 per cent of the receipts.[1] Contributions classified as "indefinite amounts" usually consist of quite small sums contributed in financial stringencies. The smaller funds, as a rule, have still another source of revenue—entertainments given at regular intervals. The net proceeds of these entertainments serve to eliminate deficits, frequently even to meet some of the running expenses of the organization.

Those that pay for the support of the funds usually manage them. Nine-tenths of the funds supported entirely by employees are managed exclusively by them. Of the jointly supported funds, about one-half are managed by employees, the other half being managed jointly or by employers alone. The following table shows the relation between the extent of employers' contributions and the influence exerted upon the management of the funds:

MANAGEMENT OF 397 ESTABLISHMENT FUNDS, CLASSIFIED ACCORDING TO SUPPORT BY EMPLOYEES ONLY, EMPLOYERS ONLY, AND JOINTLY.[1]

Management of funds.	Funds having financial support of—						Total.	
	Employees.		Employees and employer, jointly.		Employer.			
	Number.	Per cent.	Number.	Per cent.	Number.	Per cent.	Number.	Per cent.
By employees	234	89	65	52	.....	.....	299	75
Jointly	28	11	56	46	1	10	85	21
By employers	1	(2)	3	2	9	90	13	4
Total	263	100	124	100	10	100	397	100

[1] Existing agencies for health insurance in the United States, by Edgar Sydenstricker, Bulletin 212, U. S. Bureau of Labor Statistics, p. 455.
[2] Less than 1 per cent.

This table is based wholly upon a study of the provisions of the constitutions that officially govern the administration of the funds and must not be taken too literally. Very frequently the influence of the employer is seen in the management of funds supposedly wholly in the hands of the employees. In slightly over one-half of the funds executive officers, such as the secretary or treasurer, receive for their services nominal salaries, ranging from $25 to $100 per year. In one-half of the funds the financial officers are bonded. Funds having a large membership have as a rule permanent medical officials charged with the duty of investigating the validity and legitimate duration of claims. In the smaller funds the verification of claims is usually in the hands of a standing investigating committee of members. Frequently a certificate of the attending physician is required in addition to a favorable report of this committee.

Of all the funds examined less than 5 per cent have ever made any actuarial examination of their schemes, and only two are known to have permanent consulting actuaries. With a few exceptions, none of the funds studied were incorporated. It is difficult to state whether such incorporation would be of any advantage. Benefit funds are legal whether incorporated or not. The only disadvantage of lack of incorporation is the inability of members to sue the fund for torts committed by its officers or employees. The statistical results showing the workings of the establishment funds are given in Table 1:

TABLE 1.—NATURE AND EXTENT OF DISABILITY BENEFITS PAID, AVERAGE MEMBERSHIP, FREQUENCY AND DURATION OF DISABILITIES, AND CLASSIFIED PER CAPITA COST OF MAINTENANCE.

159 establishment funds.

Fund number.	Waiting period (days).	Maximum benefit period (days).	Period covered.	Average annual membership.	Average annual number of cases (all disabilities).	Average annual number of cases per member.	Average annual days of disability per member (all disabilities).	Rate of benefits per week.	Medical care furnished.	Average annual cost per member.						
										Total amount.	Cash benefit.		Medical care.		Administration.	
											Amount.	Per cent.	Amount.	Per cent.	Amount.	Per cent.
1	0	364	1916	189	69	0.37	5.4	$4.41	No	$3.89	$3.72	95.6	.....	.....	$0.17	4.4
2	0	91	1914–1916	244	163	.67	(1)	5.00	No	3.37	3.34	99.1	.....	.....	.03	.9
3	0	84	1913–1915	70	14	.20	2.8	5.25	No	2.26	2.12	93.8	.....	.....	.14	6.2
4	0	98	1912–1916	373	127	.34	6.4	3.80	No	3.60	3.39	94.2	.....	.....	.21	5.8
5	0	182	1916	110	37	.34	8.5	8.00	No	9.70	9.70	100.0	.....	.....	.....	.....
6	0	182	1912–1916	128	[2] 19	.15	1.1	10.00	No	4.76	4.57	96.0	.....	.....	.19	4.0
7	2	161	1913–1916	158	[2] 33	.21	5.2	7.00	No	4.92	4.70	95.5	.....	.....	.22	4.5
8	2	[3] 182	1912–1915	540	306	.57	7.8	5.16	No	6.21	5.73	92.3	.....	.....	.48	7.7
9	[4] 3	[5] 364	1912–1916	129,459	[2] 79,713	.62	[2] 3.1	9.70	No	12.81	10.32	80.6	.....	.....	2.49	19.4
10	3	182	1916	1,928	[2] 559	.29	6.5	13.54	No	12.33	10.78	87.4	.....	.....	1.55	12.6
11	3	182	1916	2,821	[2] 988	.35	7.7	13.63	Yes	(1)	12.89	(1)	$8.77	(1)	(1)	(1)
12	[4] 3	364	1915 and 1916	3,036	[2] 1,001	.33	(1)	9.59	(6)	(1)	8.87	(1)	4.11	(1)	(1)	(1)
13	3	70	1912–1916	3,519	[2] 983	.30	5.5	8.49	No	6.32	6.00	94.9	.....	.....	.32	5.1
14	3	182	1915 and 1916	716	270	.38	5.9	6.65	No	9.17	4.08	44.5	.....	.....	5.09	55.5
15	3	84	1913–1916	115	26	.23	3.9	12.08	No	7.04	4.97	70.6	.....	.....	2.07	29.4
16	3	364	1912–1916	313	99	.32	7.5	10.18	No	10.08	8.42	83.5	.....	.....	1.66	16.5
17	3	[7] 728	1912–1916	2,659	[2] 882	.33	9.1	8.86	(8)	10.58	8.86	83.7	.46	4.3	1.26	11.9
18	3	[9] 273	1915 and 1916	1,215	210	.17	2.3	6.76	No	2.30	2.22	96.5	.....	.....	.08	3.5
19	3	60	1912–1916	374	(1)	(1)	(1)	5.25	No	(1)	(1)	.....	.....	.....	(1)	.....
20	3	91	1916	975	205	.21	(1)	9.30	No	4.70	4.57	97.2	.....	.....	.13	2.8
21	[4] 5	364	1916	2,085	1,570	.75	(1)	(10)	No	22.28	20.45	91.8	.....	.....	1.83	8.2
22	5	126	1912–1916	5,783	1,160	.20	5.1	8.52	No	5.98	5.11	85.5	.....	.....	.87	14.5
23	6	84	1911–1915	983	[2] 225	.23	[11] 6.2	4.97	No	5.30	4.16	78.5	.....	.....	1.14	21.5
24	[4] 6	[12] 728	1911–1915	25,465	11,718	.46	12.2	8.30	(13)	18.66	13.23	70.9	1.92	10.3	3.51	18.8
25	[4] 6	[12] 728	1912–1916	48,794	20,419	.42	10.2	8.92	No	14.12	11.46	81.2	.....	.....	2.66	18.8
26	6	112	1911–1915	68	21	.31	6.9	7.00	No	5.40	5.09	94.3	.....	.....	.31	5.7
27	6	70	1912–1916	2,050	284	.14	(1)	5.83	No	4.08	3.69	90.4	.....	.....	.39	9.6
28	6	70	1912–1916	449	51	.11	(1)	4.97	No	2.75	2.59	94.2	.....	.....	.16	5.8
29	6	210	1911–1915	245	40	.16	3.7	5.81	No	2.41	2.30	95.4	.....	.....	.11	4.6
30	6	120	1912–1915	1,422	310	.22	5.0	7.40	No	4.08	3.64	89.2	.....	.....	.44	10.8
31	6	168	1912–1916	175	40	.23	3.5	6.84	No	3.40	3.22	94.7	.....	.....	.18	5.3
32	[4] 6	365	1912–1916	6,491	1,893	.29	12.1	4.99	No	10.62	7.81	73.5	.....	.....	2.81	26.5
33	[4] 7	364	1913–1916	(1)	1,923	.....	.....	[14] 13.68	(15)	(1)	(1)	.....	.....	.....	(1)	.....
34	7	120	1912–1916	93	9	.10	3.5	17.50	No	9.04	7.04	77.9	.....	.....	2.00	22.1

35	7	364	1912-1916	2,024	683	.34	4.0	[16] 8.35	[17]	7.01	4.41	62.9	1.52	21.7	1.08	15.4
36	7	[18]	1914-1916	4,340	[2] 750	.17	8.4	8.47	No	11.54	9.06	78.5			2.48	21.4
37	7	[18]	1915 and 1916	13,960	[2] 1,966	.14	6.5	10.07	No	9.28	7.87	84.8			1.41	15.2
38	[4] 7	[19]	1912-1916	54,913	23,060	.42	12.0	10.05	[6]	23.24	15.21	65.4	.62	2.7	7.41	31.9
39	7	364	1912-1915	4,461	599	.13	4.0	8.75	No	6.86	4.13	60.2			2.73	39.8
40	7	49	1911-1915	66	10	.15	2.8	7.35	No	3.62	2.87	79.3			.75	20.7
41	7	182	1912-1916	524	113	.22	5.9	6.55	Yes	9.01	6.07	67.3	2.47	27.4	.47	5.2
42	7	182	1915 and 1916	1,117	[2] 118	.17	[1]	10.63	No	3.75	3.50	93.3			.25	6.7
43	[4] 7	[7] 728	1915	27,079	6,962	.26	2.8	10.42	[6]	5.63	3.44	61.1	1.27	22.6	.92	16.3
44	7	91	1913-1916	1,465	[1]	[1]	[1]	5.00	No	4.28	4.04	94.4			.24	5.6
45	7	60	1914-1916	516	60	.12	4.0	6.13	No	3.63	3.03	83.5			.60	16.5
46	7	56	1913-1916	514	335	.65	3.8	11.17	Yes	7.17	5.87	81.9	.78	10.9	.52	7.3
47	7	[20] 200	1912-1915	2,398	528	.22	4.1	6.67	[21]	9.79	3.97	40.6	1.46	14.9	4.36	44.5
48	7	364	1913-1916	146	9	.06	3.4	6.50	No	3.11	2.72	87.5			.39	12.5
49	7	[22] 182	1915	425	74	.17	6.6	7.00	No	7.21	6.61	91.7			.60	8.3
50	[5] 7	200	1913-1915	514	105	.20	5.0	7.83	Yes	14.40	5.25	36.5	3.86	26.8	5.29	36.7
51	7	140	1911-1915	508	82	.16	[1]	7.00	No	6.04	4.90	81.1			1.14	18.9
52	7	182	1912-1916	165	33	.20	4.7	6.90	No	5.00	4.53	90.6			.47	9.4
53	7	180	1911-1915	1,482	[2] 137	.09	2.8	15.61	Yes	5.85	2.19	37.4	2.99	51.1	.67	11.5
54	7	100	1913-1916	8,176	1,217	.15	5.4	7.00	No	5.28	4.39	83.1			.89	16.9
55	7	273	1914-1916	447	59	.13	4.3	10.50	No	5.61	5.01	89.3			.60	10.7
56	7	91	1915 and 1916	90	26	.29	7.8	7.00	No	8.18	7.95	97.2			.23	2.8
57	7	91	1913-1916	5,114	1,459	.29	5.5	6.86	No	5.57	4.99	89.6			.58	10.4
58	7	90	1912-1916	8,332	[2] 1,495	.18	6.7	5.28	No	5.27	4.16	78.9			1.11	21.1
59	7	90	1912-1915	11,052	[2] 1,201	.11	3.0	7.03	No	3.13	2.28	72.8			.85	27.2
60	7	84	1912-1916	208	30	.14	3.8	7.00	No	3.39	2.85	84.1			.54	15.9
61	7	70	1916	2,437	541	.22	7.8	7.00	No	8.06	6.25	77.5			1.81	22.5
62	7	70	1912-1916	185	16	.09	2.7	6.94	No	2.13	1.91	89.7			.22	10.3
63	7	56	1911-1915	1,169	130	.11	3.7	7.00	No	3.56	2.93	82.3			.63	17.7
64	7	56	1914-1916	1,843	344	.19	3.1	6.38	Yes	[1]	[1]		[1]		[1]	
65	7	[23] 91	1912-1916	3,371	565	.17	4.5	7.26	No	3.23	2.81	87.0			.42	13.0
66	7	[24] 182	1911-1915	5,976	519	.09	4.4	6.00	No	4.14	3.21	77.5			.93	22.5

[1] Not reported.
[2] No industrial accidents reported.
[3] When balance of funds amounts to $500 or more, members disabled by accident are entitled to benefits for 91 days longer.
[4] No waiting period in industrial accidents.
[5] After first year, half rates during continuance of disability.
[6] Surgical care only.
[7] Extending over 2 years.
[8] In accidents only.
[9] Extending over 3 years.
[10] Half rate of wages at time of disability.
[11] For 1914 and 1915 only.
[12] Extending over 2 years. For industrial accidents, half rates are paid during disability.
[13] Minor surgical operations and supplies furnished.
[14] Average based upon actual expenditures including surgical care and supplies.
[15] Surgical care and supplies furnished in cases of industrial accidents.
[16] $11.38 for industrial accidents.
[17] In industrial accidents and a few other cases.
[18] Benefits are paid until service pension is awarded.
[19] During continuance of disability.
[20] After payment of $200, if employee is incapacitated for further duty he may receive additional benefit amounting to $150.
[21] All care except prescriptions and hospital expenses.
[22] May be extended in special cases to 273 days.
[23] May be extended an additional 14 days for each year of service, but not to exceed 147 days.
[24] Period may be extended an additional 182 days.

TABLE 1.—NATURE AND EXTENT OF DISABILITY BENEFITS PAID, AVERAGE MEMBERSHIP, FREQUENCY AND DURATION OF DISABILITIES, AND CLASSIFIED PER CAPITA COST OF MAINTENANCE—Continued.

159 establishment funds—Continued.

Fund number.	Waiting period (days).	Maximum benefit period (days).	Period covered.	Average annual membership.	Average annual number of cases (all disabilities).	Average annual number of cases per member.	Average annual days of disability per member (all disabilities).	Rate of benefits per week.	Medical care furnished.	Average annual cost per member.						
										Total amount.	Cash benefit.		Medical care.		Administration.	
											Amount.	Per cent.	Amount.	Per cent.	Amount.	Per cent.
67	7	182	1912-1916	49	4	0.09	3.3	$7.14	No	$3.89	$2.85	73.3			$1.04	26.7
68	7	182	1911-1915	921	(1)	(1)	(1)	[2] 6.00	No	5.88	4.70	79.9			1.18	20.0
69	7	91	1912-1916	127	55	.44	3.0	7.00	No	4.00	3.04	76.0			.96	24.0
70	7	91	1916	76	22	.29	7.3	6.21	No	7.78	6.49	83.4			1.29	16.6
71	7	91	1910-1914	1,284	218	.17	5.3	6.02	No	4.95	3.60	72.7			1.35	27.3
72	7	35	1911-1915	577	72	.13	(1)	6.00	No	3.01	2.98	99.0			.03	1.0
73	7	(1)	1914-1916	1,474	297	.20	1.5	8.72	No	3.71	1.84	49.6			1.87	50.4
74	7	182	1912-1916	69	9	.13	3.3	7.39	No	2.49	2.38	95.6			.11	4.4
75	7	49	1912-1916	1,670	438	.26	(1)	5.25	No	(1)	5.56				(1)	
76	7	[3] 364	1912-1916	6,827	1,892	.28	(1)	5.00	No	6.56	6.16	93.9			.40	6.1
77	7	364	1912-1916	165	29	.17	3.6	5.01	No	1.97	1.96	99.5			.01	.5
78	7	[4] 364	1912-1916	82	10	.12	3.3	4.76	No	3.02	2.27	75.2			.75	24.8
79	7	182	1912-1915	421	65	.15	3.9	6.25	No	2.70	2.58	95.6			.12	4.4
80	7	182	1911-1915	944	201	.21	6.2	5.83	No	4.08	3.88	95.1			.20	4.9
81	7	182	1911-1915	120	(1)	(1)	(1)	[5] 5.00	No	4.71	3.57	75.8			1.14	24.2
82	7	140	1915	74	8	.11	3.8	4.17	No	2.53	2.37	93.7			.16	6.3
83	7	91	1912-1916	217	25	.12	3.7	5.83	No	2.78	2.46	88.5			.32	11.5
84	7	91	1915 and 1916	458	46	.10	(1)	5.81	No	5.76	2.63	45.6			3.13	54.4
85	7	91	1912-1916	656	150	.23	7.8	5.00	Yes	12.25	5.90	48.2	$5.81	47.4	.54	4.4
86	7	91	1913 and 1916	506	[6] 13	.03	.4	5.00	No	.58	.31	53.4			.27	46.6
87	7	91	1912-1916	284	57	.20	5.6	4.90	No	4.09	3.92	95.8			.17	4.2
88	7	91	1911-1915	289	73	.25	4.5	5.00	No	2.05	1.98	96.6			.07	3.4
89	7	91	1912-1916	263	71	.27	7.1	5.00	No	5.30	5.09	96.0			.21	4.0
90	7	91	1913-1916	397	44	.11	2.0	5.00	No	2.29	1.44	62.9			.85	37.1
91	7	91	1916	198	27	.14	(1)	5.00	No	2.80	2.80	100.0				
92	7	[7] 560	1913-1916	3,187	731	.23	5.0	5.04	Yes	4.80	3.53	73.5	.89	18.5	.38	7.9
93	7	91	1912-1916	652	113	.17	3.8	5.81	No	3.51	3.18	90.6			.33	9.4
94	7	84	1915 and 1916	210	[6] 74	.35	2.8	4.96	No	3.53	1.75	49.6			1.78	50.4
95	7	70	1916	4,200	898	.21	(1)	5.00	No	4.62	2.94	63.6			1.68	36.4
96	7	70	1913-1915	49	5	.10	2.0	5.83	No	2.29	1.47	64.2			.82	35.8
97	[8] 7	365	1912-1916	15,410	5,967	.39	8.7	4.96	No	9.29	7.06	76.0			2.23	24.0
98	7	70	1913-1916	315	[6] 119	.38	2.3	6.07	No	2.21	1.94	87.8			.27	12.2
99	7	70	1912-1916	90	11	.12	3.2	7.05	No	2.32	2.14	92.2			.18	7.8
100	7	70	1912-1916	180	35	.19	4.6	5.83	No	4.04	3.74	92.6			.30	7.4
101	7	70	1912-1916	237	25	.11	3.9	4.97	No	2.40	2.22	92.5			.18	7.5
102	7	70	1914-1916	537	72	.14	3.8	5.00	No	2.14	2.04	95.3			.10	4.7

103	7	56	1915 and 1916..	715	89	.12	2.1	5.00	Yes.....	3.53	2.10	59.5	.96	27.2	.47	13.3
104	7	56	1912-1916.....	105	65	.62	4.4	5.00	Yes.....	5.24	3.12	59.5	.99	18.9	1.13	21.6
105	[8] 7	[9] 364	1912-1916.....	23,229	7,218	.31	9.7	4.85	No.....	9.45	6.73	71.2	.....	.....	2.72	28.8
106	7	182	1911-1915.....	231	29	.13	(1)	5.85	No.....	3.35	3.16	94.3	.....	.....	.19	5.7
107	7	182	1914-1916.....	316	48	.15	(1)	4.50	No.....	3.75	3.63	96.8	.....	.....	.12	3.2
108	7	182	1915 and 1916..	3,005	321	.11	(1)	4.50	Yes.....	3.34	2.19	65.6	.99	29.6	.16	4.8
109	7	91	1911-1915.....	3,311	439	.13	3.7	6.94	No.....	3.02	2.77	91.7	.....	.....	.25	8.3
110	7	84	1914-1916.....	1,095	(1)	(1)	(1)	4.50	Yes.....	(1)	4.46	.....	.79	.....	(1)	.....
111	7	126	1911-1916.....	728	179	.25	4.2	6.96	Yes.....	5.86	4.55	77.6	1.02	17.4	.29	5.0
112	7	70	1912-1916.....	230	25	.11	4.0	5.00	No.....	2.52	2.35	93.3	.....	.....	.17	6.7
113	7	91	1915 and 1916..	5,998	873	.15	4.1	5.97	No.....	3.70	3.46	93.5	.....	.....	.24	6.5
114	7	364	1912-1916.....	344	56	.16	7.7	2.67	No.....	3.19	2.90	90.9	.....	.....	.29	9.1
115	7	182	1912-1915.....	1,617	431	.27	7.9	4.47	Yes.....	5.14	3.91	76.1	.95	18.5	.28	5.4
116	7	91	1913-1916.....	1,198	126	.11	5.5	2.76	Yes.....	3.43	1.79	52.2	1.53	44.6	.11	3.2
117	7	91	1912-1916.....	3,297	585	.18	4.7	4.18	No.....	3.66	3.14	85.8	.....	.....	.52	14.2
118	7	91	1912-1915.....	229	[6] 25	.11	3.1	3.01	No.....	1.47	1.34	91.2	.....	.....	.13	8.8
119	7	182	1912-1916.....	255	[6] 81	.32	(1)	(10)	No.....	5.60	5.31	94.8	.....	.....	.29	5.2
120	7	182	1912-1916.....	382	94	.24	8.5	5.64	No	5.25	5.08	96.8	.....	.....	.17	3.2
121	7	56	1914-1916.....	110	16	.15	3.5	2.50	Yes.....	1.67	.87	52.1	.68	40.7	.12	7.2
122	[8] 7	70	1912-1916.....	2,518	262	.10	4.0	2.06	No.....	(1)	.94	.....	.....	.....	(1)	.....
123	[8] 7	(11)	1915.....	100	32	.32	5.0	8.97	No.....	4.04	3.59	88.9	.....	.....	.45	11.1
124	[8] 7	364	1911-1915.....	27,312	3,687	.14	4.3	9.51	(12).....	6.26	4.67	74.6	.67	10.7	.92	14.7
125	7	70	1913-1916.....	119	15	.13	(1)	12.45	No.....	3.37	2.70	80.1	.....	.....	.67	19.9
126	7	56	1914-1916.....	116	27	.23	3.8	6.57	No.....	3.63	3.57	98.3	.....	.....	.06	1.7
127	7	91	1912-1916.....	865	147	.17	5.0	7.01	No.....	5.58	5.10	91.4	.....	.....	.48	8.6
128	7	91	1911-1915.....	1,939	199	.10	2.4	7.03	No.....	2.59	2.41	93.1	.....	.....	.18	6.9
129	7	91	1911-1915.....	423	47	.11	2.2	6.81	No.....	2.30	2.17	94.3	.....	.....	.13	5.7
130	[8] 7	91	1912-1916.....	350	[6] 47	.18	(1)	6.00	(13).....	10.25	4.19	40.9	.83	8.1	5.23	51.0
131	7	280	1916.....	2,148	464	.22	5.7	9.88	No.....	6.15	5.93	96.4	.....	.....	.22	3.6
132	7	365	1915 and 1916..	3,396	321	.09	3.1	12.47	No.....	4.77	3.74	78.4	.....	.....	1.03	21.6
133	7	182	1912-1916.....	122	[6] 28	.23	6.8	10.00	No.....	7.66	7.38	96.3	.....	.....	.28	3.7
134	7	182	1912-1916.....	157	27	.17	5.9	10.00	No.....	6.99	6.76	96.7	.....	.....	.23	3.3
135	7	182	1912-1916.....	125	[6] 16	.13	4.3	10.00	No.....	5.17	4.77	92.3	.....	.....	.40	7.7
136	7	[14] 140	1915 and 1916..	51	[6] 3	.05	2.0	10.00	No.....	2.62	2.42	92.4	.....	.....	.20	7.6
137	7	91	1912-1916.....	254	[6] 25	.10	2.6	10.00	No.....	3.11	2.75	88.4	.....	.....	.36	11.6
138	7	91	1912-1916.....	167	[6] 25	.15	4.1	10.00	No.....	4.38	4.23	96.6	.....	.....	.15	3.4
139	7	84	1912-1916.....	303	38	.13	3.5	10.00	No.....	4.28	3.80	88.8	.....	.....	.48	11.2
140	7	182	1912-1916.....	2,659	437	.16	7.3	8.00	(15).....	8.10	7.01	86.5	.....	.....	1.09	13.5
141	7	[16] 91	1912-1916.....	756	240	.32	7.2	8.00	No.....	6.16	5.68	92.2	.....	.....	.48	7.8
142	7	182	1911-1915.....	1,037	134	.12	6.7	7.00	No.....	7.55	5.87	77.7	.....	.....	1.68	22.3
143	7	91	1912-1916.....	1,033	[6] 355	.34	7.2	7.00	No.....	8.50	4.83	56.8	.....	.....	3.67	43.2
144	7	70	1913-1916.....	91	[6] 12	.13	3.1	[17] 6.00	No.....	4.15	3.04	73.3	.....	.....	1.11	26.7

[1] Not reported.
[2] After first 13 weeks benefits are $3 per week.
[3] Period of payment is extended 1 year for 10-year members, 2 years for 15-year members, and 3 years for 20-year members.
[4] $5 per week for 26 weeks, then $2.50 per week during disability.
[5] $5 per week for 13 weeks and $2.50 for 13 weeks.
[6] No industrial accidents reported.
[7] Extending over 5 years.
[8] No waiting period in industrial accidents.
[9] Members contributing for 15 years and members disabled by industrial accidents may be paid benefits at half rates after the first year as long as disability continues.
[10] Rates are $5, $2.50, and $1.25 per week, being 50 cents for each cent paid in dues.
[11] As long as disabled.
[12] Medical care furnished only in some special cases.
[13] Medical care but no supplies or hospital expenses.
[14] Extending over 2 years.
[15] Medical attendance and hospital treatment but no supplies.
[16] After first 13 weeks $4 per week during continuance of disability.
[17] $10 per week during 1916.

TABLE 1.—NATURE AND EXTENT OF DISABILITY BENEFITS PAID, AVERAGE MEMBERSHIP, FREQUENCY AND DURATION OF DISABILITIES, AND CLASSIFIED PER CAPITA COST OF MAINTENANCE—Concluded.

159 establishment funds—Concluded.

Fund number.	Waiting period (days).	Maximum benefit period (days).	Period covered.	Average annual membership.	Average annual number of cases (all disabilities).	Average annual number of cases per member.	Average annual days of disability per member (all disabilities).	Rate of benefits per week.	Medical care furnished.	Average annual cost per member.						
										Total amount.	Cash benefit.		Medical care.		Administration.	
											Amount.	Per cent.	Amount.	Per cent.	Amount.	Per cent.
145	7	105	1911-1915.....	1,093	127	0.12	4.5	$5.00	No.....	$3.56	$2.62	73.6	.....	.....	$0.94	26.4
146	7	42	1912-1916.....	326	49	.15	4.4	10.00	No.....	5.52	4.81	87.1	.....	.....	.71	12.9
147	14	119	1911-1915.....	532	38	.07	3.3	7.00	No.....	3.47	2.80	80.7	.....	.....	.67	19.3
148	14	91	1912-1916.....	701	130	.19	5.8	8.76	No.....	6.63	5.67	85.5	.....	.....	.95	14.5
149	14	56	1912-1916.....	339	27	.08	2.3	8.64	(1).....	4.27	2.85	66.7	$0.34	8.0	1.08	25.3
150	14	112	1916.....	92	[2] 9	.10	2.0	7.00	No.....	1.58	.97	61.4	.....	.....	.61	38.6
151	14	91	1913-1915.....	238	37	.16	4.8	7.00	No.....	5.48	5.05	92.2	.....	.....	.43	7.8
152	14	182	1914 and 1915..	38	5	.13	3.0	3.44	No.....	2.01	1.51	75.1	.....	.....	.50	24.9
153	14	140	1911-1915.....	293	25	.09	3.3	5.04	No.....	2.61	1.95	74.7	.....	.....	.66	25.3
154	14	77	1912-1916.....	495	63	.13	4.0	5.81	No.....	3.38	2.65	78.4	.....	.....	.73	21.6
155	14	35	1912-1916.....	4,797	560	.12	3.3	5.00	No.....	1.93	1.76	91.2	.....	.....	.17	8.8
156	14	117	1913-1915.....	407	58	.14	[3]	4.00	No.....	3.92	3.12	79.6	.....	.....	.80	20.4
157	14	91	1915.....	290	31	.11	2.9	5.00	No.....	2.16	2.08	96.3	.....	.....	.08	3.7
158	14	70	1912-1916.....	68	1	.02	.5	4.00	No.....	.69	.25	36.2	.....	.....	.44	63.8
159	14	91	1911-1915.....	2,778	236	.08	2.4	5.69	No.....	2.07	1.95	94.2	.....	.....	.12	5.8

[1] Medical care only in some special cases.

[2] No industrial accidents reported.

[3] No waiting period in industrial accidents.

One hundred and fourteen out of the 159 funds covered by the study have a waiting period of seven days before the payment of cash benefits begins. The variations in the annual number of cases per member are shown for the different funds in column 7 of Table 1. The extent of disability, as indicated by number of cases, in the three principal groups of funds, the respective waiting periods of which were 3 days, 7 days, and 14 days, was as follows, when reduced to an equivalent of one year:

MEMBERSHIP AND CASES OF DISABILITY FOR THREE GROUPS OF FUNDS.

Waiting period of group.	Membership.	Cases.	Average number of cases per member.
3 days	695,865	411,201	0.59
7 days	1,270,022	327,648	.26
14 days	38,743	4,586	.12

An increase in the waiting period from 3 to 7 days reduced the disability case rate from 0.59 to 0.26. By increasing the waiting period from 3 to 14 days the disability case rate was reduced from 0.59 to 0.12, or four-fifths.

The average annual number of disability days per member, as shown in column 8 of Table 1, varies considerably among the different funds. The rather low amounts of disability shown by the membership of funds which provide for no waiting period (Nos. 1–6) may partially be explained by the very careful verification of claims. In the realization that disabilities of short duration are frequently mental rather than physical, officials of the funds take great pains in establishing their validity by personal visits. Aware of the care with which their claims will be scrutinized, members refrain from making them upon slight grounds.

Column 9 of Table 1 shows the rate of weekly cash benefit paid in each of the schemes. In funds where the amount of weekly benefit varied with the class of membership or duration of the disability period the rate indicated was arrived at by dividing the aggregate of cash benefits paid out during one representative year by the total number of disability weeks for which this total amount was paid.

The average weekly cash benefit paid for the funds reporting was $6.93—an amount too small, of course, to furnish adequate relief in economic distress due to the disability. This is particularly so in view of the fact that the great bulk of the funds furnish no medical benefits. The average per capita cost of maintaining each fund is shown in column 11, the average cost for 95 funds with a waiting period of 7 days varying from a minimum of 58 cents to a maximum

of $23.24, though in most cases the average ranged from $2 to $10. For 9 funds with a waiting period of 3 days the average varied from $2.30 to $12.81, and for 13 funds with a waiting period of 14 days the range was from 69 cents to $6.63.

The administrative costs shown in the table consist of expenditures incidental to the payment of sick benefits. To cost of administration are charged: Rent, light, and heat for offices, postage and car fare, printing and stationery, salaries of clerks and officials, including those of medical officers employed for the purpose of establishing the validity of claims. Unless otherwise specified, the administrative cost does not include items of expenditure relating to hospital accommodations, medical and surgical care of supplies. The range of variation of the per capita administrative costs is shown in the last two columns of the table. This overhead cost includes also the expense of administering death benefits paid under the provisions of the majority of the plans under consideration.

Less than one-fifth of the funds provide for some medical care. In many of these funds the care is limited to minor surgical operations and supplies in addition to one visit from a physician. Only about 5 per cent of the funds furnish medical benefits in the sense usually associated with social insurance.

PRINCIPAL FEATURES OF TRADE-UNION FUNDS.

The administration of benefit funds of trade-unions is usually carried on by the same officers that administer the general affairs of the organizations. In national and international funds the general secretary-treasurer is as a rule in direct charge. The investigation of the validity and duration of claims is generally in the hands of standing committees of the local unions. One national organization only is known to have on its staff a corps of traveling investigators who go from locality to locality for the purpose of establishing the validity of claims. Membership in the union as a rule entitles a member to sick benefits, provided his good standing on the books of the organization is established.

In a great majority of the union funds no physical examination is required of a member joining the union and the fund. A few of the funds have a special nonbenefit membership class, which entitles members to all the protective features of the organization except that of sick benefits. To this nonbeneficial group belong those who at the time of entrance are above a specified age—usually 50 years—and those afflicted with chronic diseases.

Practically all of the national and local unions provide for forfeiture of benefit if illness is caused by intemperance, debauchery, or any other immoral conduct. No actuarial examination of any of the benefit funds of the national or local trade-union funds examined is known to have been made. The statistical results showing the workings of these funds are given in Tables 2 and 3 for the national and the local groups of funds, respectively:

TABLE 2.—NATURE AND EXTENT OF DISABILITY BENEFITS PAID, AVERAGE MEMBERSHIP, FREQUENCY AND DURATION OF DISABILITIES, AND PER CAPITA COST OF CASH BENEFITS.

16 national or international trade-unions.

Fund number.	Waiting period (days).	Maximum benefit period (days).	Period covered.	Average annual membership.	Average annual number of cases (all disabilities).	Average annual number of cases per member.	Average annual days of disability per member (all disabilities).	Rate of benefits per week.	Annual cost of cash benefits per member.
1	7	78	1912–1916	236	43	0.18	4.5	$12.00	$8.94
2	[1] 7	182	1912–1916	10,017	1,359	.14	4.5	10.00	5.00
3	7	112	1912–1916	13,584	1,551	.11	3.3	7.00	3.27
4	7	91	1915	[2] 50,000	5,246	.11	4.2	5.40	2.67
5	7	[3] 700	1912–1916	886	114	.13	([4])	5.00	4.26
6	7	91	1914–1916	37,503	3,296	.09	3.7	5.00	2.23
7	7	91	1911–1915	47,272	([4])	.....	([4])	5.00	4.32
8	7	91	1912–1916	6,431	596	.09	3.5	5.00	2.03
9	7	42	1913–1916	4,438	287	.07	1.1	[5] 5.00	.79
10	7	70	1912–1916	12,536	751	.06	([4])	5.00	1.61
11	14	91	1912–1916	37,894	3,197	.08	3.1	5.00	1.82
12	14	70	1912–1916	1,788	95	.05	2.0	5.00	1.16
13	14	112	1911–1915	28,851	1,830	.06	2.8	5.00	1.68
14	14	84	1912–1915	15,538	624	.04	1.7	5.00	1.03
15	14	91	1912–1916	6,675	335	.05	2.0	4.00	1.14
16	14	91	1915	3,890	371	.10	([4])	3.00	1.56

[1] Benefits for accidents begin at once.
[2] Estimate.
[3] 50 weeks in each of two years.
[4] Not reported.
[5] Females are paid $3 per week.

As may be seen from column 2 of the table, the waiting period in three-fifths of the funds of national or international labor organizations is 7 days. The remainder of the funds have a waiting period of 14 days. The maximum length of the benefit periods is shown for each of the funds in column 3. It varies from six weeks, the lowest, to two years, the highest, the more frequently occurring maximum benefit period being about three months.

The record of the two groups of funds, the respective waiting periods of which were 7 days and 14 days, when reduced to an equivalent of one year, shows the following experience:

MEMBERSHIP AND CASES OF DISABILITY FOR TWO GROUPS OF FUNDS.

Waiting period of group.	Membership.	Cases.	Average number of cases per member.
7 days	444,449	45,495	0.10
14 days	442,075	30,148	.07

By increasing the waiting period from 7 to 14 days the disability was reduced about one-third. The annual average number of disability days reported per member was from 1.1 to 4.5 in seven funds having a waiting period of seven days, and from 1.7 to 3.1 in five funds with a waiting period of 14 days.

In the great majority of the funds maintained by the national or international labor organizations the amount of cash benefits paid per week is rather small, the average in all but two funds being less than $5. This amount is, of course, inadequate to afford full relief, particularly in view of the fact that none of the funds furnishes any medical or hospital care to its disabled members. The per capita cost of cash benefits is shown in column 10. Like the figures in the other columns of the table the variations from fund to fund are too great to permit the making of averages showing general conditions. The average annual per capita cost of cash benefits for the eight funds with a waiting period of 7 days was as low as 79 cents in one fund, while it varied from $2.03 to $8.94 in the other seven. In six funds having a waiting period of 14 days it varied from $1.03 to $1.82.

Few of the national labor organizations have any accounting systems furnishing data regarding the cost of administering the sick benefit features. In terms of a percentage of the total cost of the schemes the administrative cost in five organizations was 22.5, 12.6, 12.4, 8.8, and 6.5 per cent, respectively, an average of slightly over 11. These figures include also the cost of administering the death benefits paid under the same schemes.

TABLE 3.—NATURE AND EXTENT OF DISABILITY BENEFITS PAID, AVERAGE MEMBERSHIP, FREQUENCY AND DURATION OF DISABILITIES, AND CLASSIFIED PER CAPITA COST OF MAINTENANCE.

177 local trade-union funds.

Fund number.	Waiting period (days).	Maximum benefit period (days).	Period covered.	Average annual membership.	Average annual number of cases (all disabilities).	Average annual number of cases per member.	Average annual days of disability per member (all disabilities).	Rate of benefits per week.	Medical care furnished.	Average annual cost per member.				
										Total amount.	Cash benefit.		Administration.	
											Amount.	Per cent.	Amount.	Per cent.
1	0	77	1911-1915	173	23	0.13	3.2	$8.34	No	$5.15	$3.84	74.6	$1.31	25.4
2	0	79	1913-1916	182	[1] 3	.02	.5	7.00	No	.49	.46	93.9	.03	6.1
3	0	56	1914-1916	184	[2] 11	.06	1.1	7.00	No	1.35	1.08	80.0	.27	20.0
4	0	163	1912-1916	309	[2] 30	.10	2.6	5.82	No	2.07	2.03	98.1	.04	1.9
5	0	91	1914-1916	82	17	.21	1.4	5.00	No	1.10	1.02	92.7	.08	7.3
6	0	70	1911-1915	405	33	.08	2.4	4.97	No	2.19	1.70	77.6	.49	22.4
7	0	[3]	1916	[3]	300	[3]	[3]	4.00	[3]	[3]	[3]	.....	[3]	.....
8	0	[3]	1915	[3]	4	[3]	[3]	3.00	[3]	[3]	[3]	.....	[3]	.....
9	0	[3]	1916	400	40	.10	[3]	4.50	[3]	[3]	[3]	.....	[3]	.....
10	0	[3]	1916	[3]	2	[3]	[3]	3.00	[3]	[3]	[3]	.....	[3]	.....
11	0	[4]	[3]	[3]	36	[3]	[3]	[5] 5.00	[3]	[3]	[3]	.....	[3]	.....
12	0	112	1916	600	[3]	[3]	[3]	5.00	No	4.01	3.94	98.3	.07	1.7
13	0	175	1916	240	50	.21	10.1	5.00	No	7.86	7.21	91.7	.65	8.3
14	0	84	1916	45	5	.11	[3]	5.00	No	3.01	2.58	85.7	.43	14.3
15	0	112	1915	18	[2] 3	.17	2.8	7.00	[3]	[3]	2.78	.....	[3]	.....
16	0	70	1915	18	4	.22	3.1	6.00	[3]	[3]	2.68	.....	[3]	.....
17	0	35	1915	[3]	[2] 4	[3]	[3]	5.00	[3]	[3]	[3]	.....	[3]	.....
18	0	35	1915	127	7	.06	.4	[6] 3.00	No	[3]	[3]	.....	[3]	.....
19	0	70	1915	137	[2] 11	.08	2.6	[7] 5.00	No	[3]	1.49	.....	[3]	.....
20	0	35	1915	28	4	.14	3.2	5.00	No	[3]	2.51	.....	[3]	.....
21	0	182	1915	88	[2] 12	.14	[3]	3.00	No	[3]	[3]	.....	[3]	.....
22	0	182	1915	37	5	.14	2.9	3.00	No	[3]	1.23	.....	[3]	.....
23	0	56	1915	[3]	20	[3]	[3]	3.00	No	[3]	[3]	.....	[3]	.....
24	3	90	1912-1916	205	[2] 52	.25	6.4	10.50	No	9.39	8.40	89.5	.99	10.5
25	4	[4]	1915 and 1916	73	7	.10	13.0	2.19	No	3.82	3.78	99.0	.04	1.0
26	6	280	1916	68	29	.43	1.3	6.00	No	5.52	3.84	69.6	1.68	30.4
27	7	[4]	1912-1916	225	46	.20	14.3	10.38	No	20.98	20.10	95.8	.88	4.2
28	7	105	1913-1916	290	22	.08	3.5	10.68	No	4.65	4.37	94.0	.28	6.0
29	7	84	1912-1916	269	26	.10	3.1	10.10	No	3.80	3.17	83.4	.63	16.6
30	7	91	1913-1915	2,525	312	.12	2.4	9.00	No	3.53	3.06	86.7	.47	13.3
31	7	119	1913-1915	223	15	.07	[3]	[8] 9.00	No	4.86	4.07	83.7	.79	16.3
32	7	181	1912-1916	2,807	82	.03	.7	7.00	No	.58	.54	93.1	.04	6.9

[1] Only industrial accidents reported.
[2] No industrial accidents reported.
[3] Not reported.
[4] No limit.
[5] For 6 months, then $2.50 per week.
[6] Second-class members received $2 per week.
[7] Second-class members received $3 per week.
[8] For 8 weeks and $3 per week for 9 weeks.

TABLE 3.—NATURE AND EXTENT OF DISABILITY BENEFITS PAID, AVERAGE MEMBERSHIP, FREQUENCY AND DURATION OF DISABILITIES, AND CLASSIFIED PER CAPITA COST OF MAINTENANCE—Continued.

177 local trade-union funds—Continued.

Fund number.	Waiting period (days).	Maximum benefit period (days).	Period covered.	Average annual membership.	Average annual number of cases (all disabilities).	Average annual number of cases per member.	Average annual days of disability per member (all disabilities).	Rate of benefits per week.	Medical care furnished.	Average annual cost per member.				
										Total amount.	Cash benefit.		Administration.	
											Amount.	Per cent.	Amount.	Per cent.
33	7	91	1912-1916	50	[1] 21	0.42	2.9	7.00	No	$5.48	$2.97	54.2	$2.51	45.8
34	7	84	1914 and 1915	203	[1] 11	.05	1.4	7.00	No	1.21	.99	81.8	.22	18.2
35	7	91	1913-1916	183	14	.08	2.0	6.00	No	1.85	1.74	94.1	.11	5.9
36	7	91	1914 and 1915	1,825	182	.10	3.4	6.00	No	3.32	2.89	87.0	.43	13.0
37	7	70	1912-1916	2,402	[1] 78	.03	.6	6.00	No	[2]	.54	.....	[2]	.....
38	7	70	1913-1915	181	9	.05	2.0	6.00	No	2.11	1.71	81.0	.40	19.0
39	7	84	1915 and 1916	268	18	.07	[2]	5.00	No	1.71	1.51	88.3	.20	11.7
40	7	84	1916	541	25	.05	1.5	[3] 8.00	No	1.53	1.48	96.7	.05	3.3
41	7	182	1912-1916	305	17	.06	2.5	4.98	No	1.46	1.45	99.3	.01	.7
42	7	168	1912-1916	348	12	.04	.5	5.00	No	.18	.17	94.4	.01	5.6
43	7	105	1914-1916	435	71	.16	[2]	5.00	No	3.75	3.69	98.4	.06	1.6
44	7	91	1914-1916	330	55	.17	3.2	5.00	No	2.37	2.31	97.5	.06	2.5
45	7	84	1912-1916	82	21	.26	5.5	5.00	No	4.15	3.96	95.4	.19	4.6
46	7	84	1914-1916	358	[1] 71	.20	4.9	5.00	No	3.54	3.47	98.0	.07	2.0
47	7	70	1912-1916	228	13	.06	1.6	5.00	No	1.19	1.12	94.1	.07	5.9
48	7	70	1914-1916	190	44	.23	2.2	5.00	No	1.71	1.58	92.4	.13	7.6
49	7	70	1914-1916	945	152	.16	[2]	5.00	No	[2]	1.71	.....	[2]	.....
50	7	70	1911-1915	158	14	.09	2.6	5.23	No	2.44	1.83	75.0	.61	25.0
51	7	56	1915 and 1916	1,494	346	.23	2.4	5.00	No	1.30	1.17	90.0	.13	10.0
52	7	42	1914-1916	497	25	.05	1.7	5.00	No	1.09	.99	90.8	.10	9.2
53	7	42	1915 and 1916	1,325	118	.09	3.0	5.00	No	1.86	1.68	90.3	.18	9.7
54	7	84	1913-1915	1,575	113	.07	2.8	5.00	No	1.75	1.67	95.4	.08	4.6
55	7	35	1913-1916	227	23	.10	2.8	5.00	No	[2]	1.54	.....	[2]	.....
56	7	91	1911-1915	60	5	.09	2.7	4.00	No	1.37	1.20	87.6	.17	12.4
57	7	42	1916	203	5	.03	.6	4.00	No	.57	.57	100.0	.....	.....
58	7	91	1915 and 1916	177	4	.02	1.1	3.00	No	.41	.41	100.0	.....	.....
59	7	91	1915 and 1916	139	2	.01	.4	3.00	No	.23	.19	82.6	.04	17.4
60	7	91	1913-1916	175	3	.02	.7	3.00	No	.27	.27	100.0	.....	.....
61	7	91	1913-1915	522	41	.08	3.7	3.00	No	1.52	1.36	89.5	.16	10.5
62	7	140	1916	640	131	.21	[2]	4.00	[2]	[2]	6.88	.....	[2]	.....
63	7	140	1916	180	36	.20	2.1	3.00	No	38.93	38.89	99.9	.04	.1
64	7	[2]	1916	150	94	.63	8.8	3.50	[2]	[2]	1.77	.....	[2]	.....
65	7	28	1916	120	5	.04	[2]	5.00	[2]	[2]	[2]	.....	[2]	.....
66	7	[2]	1916	138	38	.28	6.4	5.00	No	3.50	3.15	90.0	.35	10.0
67	7	[2]	1916	[2]	6	[2]	[2]	[2]	[2]	[2]	[2]	.....	[2]	.....

68	7	196	1916	370	70	.19	5.2	[4] 5.00	No	2.91	2.72	93.5	.19	6.5
69	7	105	1916	330	61	.19	6.9	6.00	(2)	(2)	4.84	.....	(2)	.....
70	7	91	1916	(2)	42	(2)	(2)	5.00	(2)	(2)	(2)	.....	(2)	.....
71	7	364	1916	300	60	.20	6.4	[5] 7.00	No	1.96	1.64	83.7	.32	16.3
72	7	228	1915	756	77	.10	1.5	5.00	No	.64	.58	90.6	.06	9.4
73	7	140	1916	1,782	64	.04	.7	[6] 7.00	No	.52	.47	90.4	.05	9.6
74	7	91	1916	276	116	.42	10.9	7.00	No	8.41	7.95	94.5	.46	5.5
75	7	91	1916	120	36	.30	9.2	5.00	(2)	(2)	5.08	.....	(2)	.....
76	7	70	1916	340	73	.22	5.8	5.00	No	3.18	3.10	97.5	.08	2.5
77	7	112	1916	(2)	22	(2)	(2)	[7] 5.00	(2)	(2)	(2)	.....	(2)	.....
78	7	91	1916	90	8	.09	1.8	6.00	No	1.56	1.20	76.9	.36	23.1
79	[8] 7	(9)	1916	73	5	.07	(2)	[10] 8.00	No	9.94	9.23	92.9	.71	7.1
80	7	112	1915	14	[11] 2	.14	2.5	5.00	(2)	(2)	1.07	.....	(2)	.....
81	7	84	1915	210	28	.13	7.7	5.00	(2)	(2)	4.81	.....	(2)	.....
82	7	91	1915	246	5	.02	1.1	5.00	(2)	(2)	.70	.....	(2)	.....
83	7	91	1915	130	7	.05	5.0	5.00	(2)	(2)	3.32	.....	(2)	.....
84	7	91	1915	46	5	.11	4.0	5.00	(2)	(2)	2.28	.....	(2)	.....
85	7	91	1915	340	78	.23	6.0	5.00	(2)	(2)	3.63	.....	(2)	.....
86	7	70	1915	425	123	.29	4.5	5.00	(2)	(2)	1.79	.....	(2)	.....
87	7	42	1915	24	[1] 3	.13	5.3	3.00	(2)	(2)	1.88	.....	(2)	.....
88	7	84	1915	70	14	.20	8.1	3.00	(2)	(2)	2.88	.....	(2)	.....
89	7	42	1915	25	[1] 2	.08	2.2	3.00	(2)	(2)	.96	.....	(2)	.....
90	7	182	1915	138	30	.22	(2)	[12] 3.00	No	(2)	(2)	.....	(2)	.....
91	7	91	1915	(2)	10	(2)	(2)	5.00	No	(2)	(2)	.....	(2)	.....
92	7	91	1915	24	[1] 1	.04	4.1	5.00	No	(2)	2.69	.....	(2)	.....
93	7	91	1915	29	[1] 2	.07	3.4	5.00	No	(2)	2.06	.....	(2)	.....
94	7	91	1915	44	16	.36	11.3	5.00	No	(2)	6.20	.....	(2)	.....
95	7	70	1915	32	[1] 3	.09	3.3	5.00	No	(2)	1.86	.....	(2)	.....
96	7	70	1915	15	[1] 2	.13	2.3	5.00	No	(2)	.99	.....	(2)	.....
97	7	70	1915	33	[1] 3	.09	3.4	5.00	No	(2)	1.94	.....	(2)	.....
98	7	56	1915	395	96	.24	(2)	5.00	No	(2)	(2)	.....	(2)	.....
99	7	112	1915	72	18	.25	7.5	10.00	No	(2)	8.16	.....	(2)	.....
100	7	91	1915	12	[1] 5	.42	12.3	5.00	No	(2)	6.63	.....	(2)	.....
101	7	91	1915	72	[1] 7	.10	(2)	5.00	No	(2)	(2)	.....	(2)	.....
102	7	84	1915	240	[1] 18	.08	3.3	5.00	No	(2)	1.99	.....	(2)	.....
103	7	56	1915	(2)	51	(2)	3.2	5.00	No	(2)	1.79	.....	(2)	.....
104	7	70	1915	175	16	.09	(2)	5.00	No	(2)	(2)	.....	(2)	.....
105	7	91	1915	67	4	.06	2.8	5.40	No	(2)	1.85	.....	(2)	.....
106	7	91	1915	19	[1] 1	.05	5.2	5.40	No	(2)	3.69	.....	(2)	.....
107	7	91	1915	96	32	.33	(2)	5.40	No	(2)	(2)	.....	(2)	.....
108	7	70	1915	45	4	.09	5.0	5.00	No	(2)	3.09	.....	(2)	.....
109	7	25	1915	125	7	.06	1.7	5.00	No	(2)	.92	.....	(2)	.....
110	7	35	1915	205	16	.08	(2)	5.00	No	(2)	(2)	.....	(2)	.....
111	7	91	1915	31	2	.07	1.1	5.00	No	(2)	.48	.....	(2)	.....
112	7	91	1915	19	1	.05	5.2	5.00	No	(2)	3.40	.....	(2)	.....
113	7	91	1915	(2)	3	(2)	(2)	5.00	No	(2)	(2)	.....	(2)	.....
114	7	91	1915	(2)	(2)	(2)	(2)	5.00	No	(2)	(2)	.....	(2)	.....

[1] No industrial accidents reported.
[2] Not reported.
[3] $2 for the first week after waiting period.
[4] For 8 weeks, then $3 for 20 weeks.
[5] For 26 weeks, then $3.50 for 26 weeks.
[6] For 10 weeks, then $3.50 for 10 weeks.
[7] For 8 weeks, then $2.50 for 8 weeks.
[8] No waiting period in industrial accidents.
[9] No limit.
[10] $10 per week for industrial accidents.
[11] Only industrial accidents reported.
[12] For 13 weeks, then $1.50 for 13 weeks.

TABLE 3.—NATURE AND EXTENT OF DISABILITY BENEFITS PAID, AVERAGE MEMBERSHIP, FREQUENCY AND DURATION OF DISABILITIES, AND CLASSIFIED PER CAPITA COST OF MAINTENANCE—Concluded.

177 local trade-union funds—Concluded.

Fund number.	Waiting period (days).	Maximum benefit period (days).	Period covered.	Average annual membership.	Average annual number of cases (all disabilities).	Average annual number of cases per member.	Average annual days of disability per member (all disabilities).	Rate of benefits per week.	Medical care furnished.	Average annual cost per member.				
										Total amount.	Cash benefit.		Administration.	
											Amount.	Per cent.	Amount.	Per cent.
115	7	91	1915	(1)	45	(1)	(1)	6.00	No	(1)	(1)		(1)	
116	10	[2] 364	1912–1916	60	6	0.10	3.5	12.00	No	$8.00	$5.99	74.9	$2.01	25.1
117	10	91	1912–1916	381	62	.16	4.6	7.00	Yes	6.09	4.64	76.2	[3] 1.45	23.8
118	10	70	1915 and 1916	5,385	270	.05	1.7	4.96	Yes	1.69	1.03	60.9	[4] .66	39.1
119	10	42	1916	(1)	63	(1)	(1)	8.33	(1)	(1)	(1)		(1)	
120	12	312	1915	(1)	10	(1)	(1)	(1)	(1)	(1)	(1)		(1)	
121	14	182	1912–1916	382	26	.07	2.8	10.00	No	4.95	3.97	80.2	.98	19.8
122	14	91	1912–1916	366	37	.10	3.7	6.45	No	3.47	3.42	98.6	.05	1.4
123	14	84	1912–1916	454	77	.17	2.7	8.00	No	3.15	3.09	98.1	.06	1.9
124	14	182	1912–1916	40	3	.09	3.4	7.00	No	3.49	3.47	99.4	.02	.6
125	14	140	1914–1916	408	20	.07	3.2	7.00	No	3.28	3.19	97.3	.09	2 7
126	14	91	1912–1916	169	39	.23	5.0	7.00	No	5.01	4.98	99.4	.03	.6
127	14	84	1915	1,539	185	.12	5.2	7.00	No	4.73	4.37	92.4	.36	7.6
128	14	84	1912–1916	782	[5] 38	.05	1.9	7.00	No	1.98	1.90	96.0	.08	4.0
129	14	70	1914–1916	394	46	.12	2.2	7.00	No	2.17	1.90	87.6	.27	12.4
130	14	70	1912–1916	832	[6] 59	.07	2.5	7.00	No	1.83	1.62	88.5	.21	11.5
131	14	78	1912–1916	58	5	.09	4.1	6.00	No	3.60	3.52	97.8	.08	2.2
132	14	84	1915	150	[6] 27	.18	7.3	6.00	No	5.42	5.17	95.4	.25	4.6
133	14	168	1912–1916	1,209	55	.05	(1)	[7] 5.00	No	.88	.79	89.8	.09	10.2
134	14	105	1912–1916	603	[6] 97	.16	4.8	5.00	No	3.48	3.45	99.1	.03	.9
135	14	91	1914–1916	165	[5] 4	.02	1.2	5.00	No	.93	.88	94.6	.05	5.4
136	14	91	1913–1915	206	19	.09	3.7	5.00	No	3.00	2.18	72.7	.82	27.3
137	14	84	1914–1916	355	19	.05	2.2	5.00	No	1.30	1.24	95.4	.06	4.6
138	14	84	1912–1916	185	33	.18	4.9	5.00	No	3.42	3.36	98.2	.06	1.8
139	14	84	1913–1915	1,162	128	.11	2.5	5.00	No	(1)	1.75		(1)	
140	14	84	1912–1914	1,777	141	.08	3.0	5.00	No	2.76	2.13	77.2	.63	22.8
141	14	84	1913–1915	516	39	.08	3.0	5.00	No	2.86	2.17	75.9	.69	24.1
142	14	84	1913–1915	1,478	106	.07	2.7	5.00	No	2.28	1.95	85.5	.33	14.5
143	14	84	1914–1916	1,372	25	.02	1.4	5.00	No	1.12	.89	79.5	.23	20.5
144	14	84	1911–1915	968	[5] 183	.19	4.9	5.00	No	(1)	3.46		(1)	
145	14	42	1914–1916	237	19	.08	1.1	5.00	No	.84	.80	95.2	.04	4.8
146	14	42	1914–1916	960	87	.09	3.1	5.00	No	1.91	1.78	93.2	.13	6.8
147	14	42	1915–1916	427	58	.14	4.4	5.00	Yes	2.94	2.21	75.2	[8] .73	24.8
148	14	140	1913–1915	463	[6] 78	.17	7.9	3.00	No	3.12	2.89	92.6	.23	7.4
149	14	91	1914–1916	255	16	.06	2.2	3.00	No	1.40	.93	66.4	.47	33.6

150	14	91	1913-1915	604	26	.04	1.9	2.00	No	.58	.54	93.1	.04	6.9
151	14	(1)	1916	180	39	.22	6.9	7.00	(1)	(1)	3.90		(1)	
152	14	42	1916	250	37	.15	(1)	6.00	(1)	(1)	3.00		(1)	
153	14	140	1916	400	60	.15	5.7	[9] 6.00	No	3.09	3.07	99.4	.02	.6
154	14	91	1916	255	54	.21	9.7	4.00	(1)	(1)	3.87		(1)	
155	14	182	1916	700	474	.68	(1)	[10] 4.00	No	2.68	2.56	95.5	.12	4.5
156	14	(11)	(1)	430	89	.21	(1)	8.00	No	5.23	4.63	88.5	.60	11.5
157	14	56	1916	325	241	.74	(1)	4.00	(10)	(1)	2.97		(1)	
158	14	112	1915	60	18	.30	(6)	7.00	(1)	(1)	(1)		(1)	
159	14	112	1915	35	[5] 1	.03	1.8	5.00	(1)	(1)	1.14		(1)	
160	14	112	1915	50	[6] 2	.04	4.8	5.00	(1)	(1)	3.18		(1)	
161	14	112	1915	98	[6] 2	.02	1.6	5.00	(1)	(1)	1.01		(1)	
162	14	112	1915	60	3	.05	2.7	5.00	(1)	(1)	1.64		(1)	
163	14	112	1915	31	[6] 1	.03	2.5	5.00	(1)	(1)	1.60		(1)	
164	14	112	1915	25	[6] 1	.04	1.5	5.00	(1)	(1)	.85		(1)	
165	14	70	1915	62	(5)	.02	1.9	5.00	(1)	(1)	1.28		(1)	
166	14	91	1915	397	44	.11	(1)	5.00	No	(1)	(1)		(1)	
167	14	112	1915	45	17	.38	(1)	7.00	No	(1)	(1)		(1)	
168	14	112	1915	29	[6] 3	.10	7.2	7.00	No	(1)	5.79		(1)	
169	14	91	1915	40	[6] 4	.10	4.6	5.00	No	(1)	2.73		(1)	
170	14	91	1915	23	4	.17	3.0	5.00	No	(1)	1.30		(1)	
171	14	35	1915	81	10	.12	3.4	5.00	No	(1)	1.78		(1)	
172	14	91	1915	(1)	1	(1)	(1)	4.00	No	(1)	(1)		(1)	
173	14	91	1915	70	5	.07	3.4	5.00	No	(1)	2.03		(1)	
174	14	91	1915	(1)	3	(1)	(1)	5.00	No	(1)	(1)		(1)	
175	14	91	1915	102	5	.05	3.5	5.00	No	(1)	2.24		(1)	
176	28	182	1912-1916	62	8	.13	11.9	10.00	No	13.28	13.23	99.6	.05	.4
177	30	(1)	1916	200	48	.24	(1)	5.00	(1)	(1)	4.50		(1)	

[1] Not reported.
[2] Extending over 2 years.
[3] Inclusive of per capita cost of 31 cents for medical care.
[4] Inclusive of per capita cost of 51 cents for medical care.
[5] Only industrial accidents reported.
[6] No industrial accidents reported.
[7] For 6 weeks, $3 for 6 weeks and $1 for 12 weeks.
[8] Includes per capita cost of 70 cents for medical care.
[9] For 10 weeks, then $3 for 10 weeks.
[10] For 13 weeks, then $2 for 13 weeks.
[11] No limit.

The variations in the length of the waiting period in the benefit funds of local trade-unions are great. Waiting periods of as long as 28 and 30 days were found in two organizations. Slightly over one-third (55 funds) had a waiting period of 14 days. Not less than one-half of all (89) had a waiting time of 7 days. About one-seventh (23) of the funds, however, report benefit payments beginning immediately upon the occurrence of the disability. In more than one-half of all the funds reporting (100) the maximum length of the benefit period was 12 to 13 weeks. The relative maximum of the benefit periods of individual funds are shown in column 3 of Table 3.

The records of local-union funds with a waiting period of seven days were equivalent to a membership of 82,173 for one year. This membership was subject to 7,405 cases of sickness, an average of 0.09 per member. This shows that less than 1 member out of every 10 was subjected to a case of sickness per year.

The average annual number of disability days per member shows considerable variations in the different funds, ranging from less than a day in several cases to as much as 14 days in one fund. The average cash benefit per week for all the funds was $5.45, an amount rather small, in view of the fact that none of the schemes except two furnished any sort of medical benefits.

The average per capita cost of maintaining the funds varies widely in the different funds. Reference to column 11 of Table 3 will show the extent of this variation.

PRODUCTIVITY OF LABOR IN THE ANTHRACITE COAL MINES.

BY PAUL F. BRISSENDEN.

By the terms of the wage agreement entered into on May 5, 1916, the workday in the anthracite coal fields was reduced from nine to eight hours. This change, which constituted an 11 per cent reduction in working time, went into effect on May 9, 1916. The eight-hour workday was, therefore, in effect for 7 months and 23 days and the nine-hour workday for 4 months and 8 days during the year 1916, and the nine-hour workday during all of the year 1915. Immediately upon the introduction of the eight-hour day the output of the majority of the anthracite coal operators was considerably reduced. It has been asserted in some quarters that this diminished output was due mainly, if not entirely, to the decreased production of labor caused by the shortening of labor hours, and the suggestion has been made that the present national emergency necessitates a return to the nine-hour standard. The facts at hand do not bear out this assertion. The deficit in total production in 1916 as compared with 1915 was due to the fact that fewer men were engaged in mining operations during 1916 than in 1915.

During the months immediately following the adoption of the eight-hour day there was a considerable reduction not only in output but in the number of men employed in and about the anthracite mines. In fact, there were fewer men employed in the anthracite fields in 1916 than there had been at any previous period since 1904. According to the reports of the United States Geological Survey, in 1915 there were 176,552 men employed, whereas the Federal Trade Commission reports for 1916 only 159,456 anthracite workers. Comparing the output for the five-month period from April to August, 1916, with the corresponding period in 1915, we find that for the 12 leading railroad coal companies, whose output constitutes not less than 70 per cent of the total anthracite output, the production had decreased from 22,323,134 gross tons in 1915 to 20,330,485 gross tons in 1916, or nearly 2,000,000 gross tons, constituting a reduction of 8.9 per cent. The following table shows in detail the gross tonnage production of these 12 companies during the five-month period, April to August, in each year and indicates the increase or decrease in gross tons and in rates per cent.

OUTPUT OF ANTHRACITE COAL (12 COMPANIES) APRIL TO AUGUST, 1915 AND 1916.

Companies.	1915 (gross tons).	1916 (gross tons).	Decrease (−) or increase (+) in 1916 as compared with 1915.	
			Gross tons.	Per cent.
Philadelphia & Reading Coal & Iron Co	3,357,877	3,592,671	+ 234,794	+ 7.0
Delaware, Lackawanna & Western R. R. Co	3,598,950	3,331,423	− 287,527	− 8.0
Delaware & Hudson Co	3,370,889	2,745,324	− 625,565	−18.6
Lehigh Valley Coal Co	2,747,299	2,405,903	− 341,396	−12.4
Coxe Bros	612,333	619,287	+ 6,954	+ 1.1
Pennsylvania Coal Co	2,063,616	1,987,014	− 76,602	− 3.7
Hillside Coal & Iron Co	614,521	518,733	− 95,788	−15.6
Lehigh & Wilkes-Barre Coal Co	1,727,354	1,639,651	− 87,703	− 5.1
Susquehanna Coal Co	1,530,729	1,412,495	− 118,234	− 7.7
Lehigh Coal & Navigation Co	1,569,607	1,051,288	− 518,319	−33.0
Scranton Coal Co	656,897	589,515	− 67,382	−10.3
Kingston Coal Co	473,062	457,181	− 15,881	− 3.4
Total	22,323,134	20,330,485	−1,992,649	− 8.9

An examination of the labor supply of the same companies during the corresponding periods of these two years shows that in almost every instance the labor force had diminished. It is to be noted that the ratios of decrease in the labor force are about as large as the ratios of decrease in production. Over against a decrease in output of 8.9 per cent there appears a decrease in the labor force of 8.8 per cent. The figures in detail are as follows:

PER CENT OF DECREASE IN OUTPUT AND IN THE LABOR FORCE IN 1916 AS COMPARED WITH 1915, FOR 12 COMPANIES, DURING APRIL TO AUGUST EACH YEAR.

[Source: The Federal Trade Commission. The percentages were computed from data furnished by the companies.]

Companies.	Per cent of decrease in labor force.						Per cent of decrease (−) or increase (+) in output.
	April.	May.	June.	July.	August.	Average for 5 months.	
Philadelphia & Reading Coal & Iron Co	2.1	7.1	12.6	17.2	15.6	10.9	+ 7.0
Delaware, Lackawanna & Western R. R. Co	3.0	4.5	5.6	5.8	6.4	5.1	− 8.0
Delaware & Hudson Co	11.5	12.5	10.9	9.3	9.7	10.8	−18.6
Lehigh Valley Coal Co	12 6	17 8	14.5	11.8	12.7	14.0	−12.4
Coxe Bros	12.5	17.3	17 8	16.6	16.6	16.1	+ 1.1
Pennsylvania Coal Co	8.1	8.1	7.6	10.3	11.0	8.8	− 3.7
Hillside Coal & Iron Co	15.3	16.8	14.8	16.9	16.4	16.0	−15.6
Lehigh & Wilkes-Barre Coal Co	16.7	20.8	19.7	20.6	25.6	20.7	− 5.1
Susquehanna Coal Co	12.9	15.6	16.9	16.0	15.6	15.4	− 7.7
Lehigh Coal & Navigation Co	(1)	(1)	(1)	(1)	7.3	(1)	−33.0
Scranton Coal Co	17.8	15.5	15.0	12.7	12.3	14.7	−10.3
Kingston Coal Co	15.7	15.0	14.4	13.2	13.3	14.3	− 3.4
Total						[2] 8.8	− 8.9

[1] Data not available.

[2] Not including data for 1 company, not reported.

The figures show that only in the case of the Delaware, Lackawanna & Western Railroad Co. and the Delaware & Hudson Co. was the rate of decrease in productivity greater than the rate of decrease in the labor force. In two instances, however, the reverse was true—

the output of the Philadelphia & Reading Coal & Iron Co. increased 7 per cent, while its labor force diminished 10.9 per cent, and likewise the output of Coxe Bros. increased 1.1 per cent, while its labor force decreased 16.1 per cent during the same period.

Making use of figures furnished by the Federal Trade Commission the Department of Labor has prepared the following table showing the relative production in this industry during the calendar years 1915 and 1916:

Anthracite coal production.

	1915.	1916.
Number of workmen employed:		
Contract miners	41,757	39,390
Contract miners' laborers	32,595	24,957
Other inside labor	44,809	40,806
Outside labor	40,230	37,756
Total	159,391	142,909
Production of coal in gross tons	72,279,944	71,248,807
Average number of days worked	230	253
Man-days worked by miners and miners' laborers	17,067,087	16,180,303
Man-days worked by all labor	35,599,300	34,524,266
Output per man-day for miners and miners' laborers, gross tons	4.08	4.20
Output per man-day for all labor, gross tons	2.03	2.06
Per cent of increased production per man-day, 1916 over 1915, for miners and miners' laborers		2.90
Per cent of increased production per man-day, 1916 over 1915, for all labor		1.40

The figures for a number of workmen employed are based upon reports furnished by 11 railroad coal companies and 24 of the so-called independent coal companies, which together contribute about 90 per cent of the total output of the anthracite field. The average number of days worked is based upon individual reports of the 35 companies considered and the product of this average and the number of workmen employed gives the number of "man-days" worked. The output per "man-day" is obtained by dividing the number of gross tons produced by the number of "man-days" worked.

The number of employees of the 11 railroad coal companies in 1916 was 8.8 per cent less than it was in 1915, and the total labor force of the 24 independent companies was 19 per cent less in 1916 than in 1915. The whole force of labor employed in the anthracite fields was 10.3 per cent less in 1916 than in 1915. This is a greater proportionate reduction than the reduction in output, which constituted 8.9 per cent for the 12 railroad coal companies. The figures show that the output for the 35 largest anthracite operators, producing over 90 per cent of the entire output, was 72,279,944 gross tons in 1915 and decreased to 71,248,807 gross tons in 1916, showing

a decrease of 1,031,137 gross tons, or 1.4 per cent as compared with that of the previous year. For the 11 railroad coal companies this decrease for the whole year constituted only 158,181 gross tons, or 0.3 per cent of their 1915 output, while for the other 24 operators it was 873,056 gross tons, or 7.1 per cent of their 1915 output.

As would be expected, the loss in number of laborers was made up in part by an increase in 1916 of the number of days worked. The 24 independent companies operated their mines 254 days in 1916, as compared with 248 days in 1915, and the railroad companies operated their collieries 246 days in 1916, while they worked only 223 days in 1915. The independents' operating time was thus increased 2.4 per cent in 1916 and that of the railroad companies 10.3 per cent. Among the railroad coal companies there is a wide difference in the percentage of increase in number of days worked. In the case of the Lehigh Coal & Navigation Co. there was an actual decrease in days worked, that company operating in 1916 only 225 days, whereas in 1915 it operated 244 days. All the other companies show an increase in number of days worked, ranging from 3 per cent for the Pennsylvania Coal Co. to 26.1 for the Philadelphia & Reading Coal & Iron Co. In spite of the heavy decrease in the labor supply (8.8 per cent for the 11 railroad coal companies and 19 per cent for the independents), the number of "man-days" worked in the collieries decreased only 2.3 per cent for the railroad coal companies and 18.5 per cent for the independents.

The closest approximation to the productivity of anthracite labor in 1916 may be reached from a study of the output per "man-day." The 11 railroad companies had an output per "man-day" for miners and miners' laborers of 4.14 gross tons in 1916, as compared with 4.12 gross tons in 1915. The 24 independent operators show an output per "man-day" of 4.41 gross tons in 1916, as compared with 3.93 gross tons in 1915. This indicates that there was an increase in the output per "man-day" of 0.5 per cent for the 11 railroad coal companies and 12.2 per cent for the 24 independent companies, these two groups representing at least 90 per cent of the total anthracite output. The corresponding figures for output for all laborers are not quite so favorable. The output per "man-day" for the 11 railroad companies was 1.98 gross tons in 1916 and 2.04 gross tons in 1915, indicating a decrease in output per "man-day" of 2.9 per cent. The 24 independents, however, show a considerable increase, their output for 1916 being 2.17 gross tons and for 1915, 1.97 gross tons, an increase for 1916 over 1915 of 10.2 per cent. Four of the railroad coal companies had an increased output per "man-day" for 1916, as compared with 1915, i. e., 7.9 per cent for the Delaware, Lackawanna & Western Railroad Co., 5.8 per cent for the Penn-

sylvania Coal Co., 7.5 per cent for the Susquehanna Coal Co., and 3.3 for the Lehigh Coal & Navigation Co.

In view of the fact that the miners' workday was shortened by 11 per cent in all collieries on May 9, 1916, the increased output per man-day is all the more remarkable. It has been noted that there was a decrease of 2.9 per cent in the total per man-day output of the railroad coal companies. Seven of these companies showed a decrease and four an increase in per man-day output. Only in the case of Coxe Bros. Co. did the decrease in output per man-day reach the 11 per cent decrease effected in the length of the workday.

The following figures, furnished by the coal department of the Delaware & Hudson Co., confirm the evidence of the other data presented. The table shows by months in 1916 the number of miners and miners' laborers employed, the average number of days worked, the productivity per day worked by miners, and the productivity per day worked by miners and miners' laborers.

THE DELAWARE & HUDSON CO., COAL DEPARTMENT, JAN. TO NOV. 30 (DEC. 1), 1916.

Month.	Miners employed.	Total miners and miners' laborers.	Average days worked.	Fresh mined production.	Production per day worked by miners.	Production per day worked by miners and miners' laborers.
January	4,461	9,752	20	597,367	6.5308	2.9527
February	4,047	8,796	21	595,706	7.0512	3.1796
March	4,000	8,230	18	483,108	6.8337	3.2822
April	3,791	7,584	19	551,346	7.5836	3.7033
May	3,684	7,467	22	605,692	7.5406	3.6030
June	3,806	7,539	21	509,166	6.4865	3.2388
July	3,861	7,617	21	539,789	6.5210	3.2505
August	3,806	7,313	21	539,332	6.4814	3.7256
September	3,710	6,995	20	507,914	6.6784	3.4501
October	3,485	6,847	23	543,520	6.5293	3.4511
November	3,609	6,967	22	574,856	7.1597	3.6915
Total and average	3,876	7,817	228	6,047,796	6.8434	3.3053

NOTE.—From Jan. 1, 1915, to May 9, 1916, the working-day was 9 hours. From May 10, 1916, to date, the working-day has been 8 hours. Since Sept. 22, 1916, there has been a strike on at the Greenwood colliery.

The figures in the last two columns show for the month of May, which may be taken as the first eight-hour-day month, a slight decrease in output per day worked by miners. It will be noticed that there was also a decrease in the number of employees between April and May, and during the last eight months reported there was no general and continuing decrease in productivity per day worked, i. e., output per man-day. In fact, in the month of November, the productivity per day worked by miners was greater than during any of the preceding five months, indicating that even if the immediate effect of the shortening of the workday was to decrease productivity there was apparently a tendency to come back to normal after a short time.

The bulletins of the United States Geological Survey on "The Mineral Resources of the United States" report the average coal tonnage per man per day, by years, from 1890 to 1915, inclusive. The section of their tabular statement on this subject which pertains to anthracite is reprinted herewith.

ANTHRACITE COAL PRODUCED PER MAN EMPLOYED, 1890-1915.

[Source: U. S. Geological Survey, Mineral Resources of the United States. Coal in 1915—Part A. Production, p. 363.]

Year.	Men employed.	Days worked.	Average tonnage per man per day.	Average tonnage per man per year.	Year.	Men employed.	Days worked.	Average tonnage per man per day.	Average tonnage per man per year.
1890	126,000	200	1.85	369	1903	150,483	206	2.41	496
1891	126,350	203	1.98	401	1904	155,861	200	2.35	469
1892	129,050	198	2.06	407	1905	165,406	215	2.18	470
1893	132,944	197	2.06	406	1906	162,355	195	2.25	439
1894	131,603	190	2.08	395	1907	167,234	220	2.33	512
1895	142,917	196	2.07	406	1908	174,174	200	2.39	478
1896	148,991	174	2.10	365	1910	169,497	229	2.17	498
1897	149,884	150	2.34	351	1911	172,585	246	2.13	524
1898	145,504	152	2.41	367	1912	174,030	231	2.10	485
1899	139,608	173	2.50	433	1913	175,745	257	2.02	520
1900	144,206	166	2.40	398	1914	179,679	245	2.06	505
1901	145,309	196	2.37	464	1915	176,552	230	2.19	504
1902	148,141	116	2.40	279					

An examination of these figures shows that more than once since 1890 the tonnage per man per day has decreased from one year to the next by an appreciable amount. Without any change in the working-day the tonnage per man per day decreased from 2.35 gross tons in 1904 to 2.18 gross tons in 1905, again from 1908 to 1910 the tonnage per man per day decreased from 2.39 to 2.17 gross tons, and this decrease continued in 1911, 1912, and 1913, being 2.13, 2.10, and 2.02 gross tons, respectively, in the years mentioned.

The foregoing evidence in regard to the effect of the eight-hour day upon the productivity of the mines is reinforced by the testimony of the anthracite operators. At a recent conference with the Federal Trade Commission they testified that it was their belief that the efficiency of the anthracite mine worker had not been diminished, but on the contrary had probably been increased to a slight extent since the introduction of the eight-hour day. They said, however, that it could not be inferred from this increase in production per man day that there had been a corresponding increase in efficiency, because the increase in productivity per man day was very largely due to the fact that the miner in 1916 did his work under much more favorable conditions than in 1915. Because of the shrinkage in the labor force and the unusually strong demand for coal it was necessary to confine operations as far as possible to the thick veins, and in general to work chiefly in those veins from which the greatest amount of coal could be taken in the shortest possible time.

It is interesting to note that the total anthracite production in 1917 is materially in excess of the production for 1916. According to figures furnished by the Anthracite Bureau of Information the production in May of this year was 6,917,525 tons, as against 5,547,899 tons for May of last year, and the production in 1917 up to and including May was 30,618,056 tons, as against 27,784,690 tons for the same period last year.

In conclusion, the evidence seems to be decisive that such decrease in productivity as did occur during the months following the introduction of the eight-hour day was due to a marked falling off in the number of employees and not to the shortening of the workday. Judging from the figures given it appears that no gain in production would result from increasing the hours of labor in the anthracite mines at the present time. If greater production is to be obtained it would seem that some other method than increasing the number of hours per day must be devised.

WILL PROFIT SHARING SOLVE LABOR DIFFICULTIES?

BY BORIS EMMET, PH. D.

The term "profit sharing" has been extended in popular usage to embrace numerous gain-sharing or bonus schemes, the essential character of which places them outside of a correct interpretation of the term. Many of the schemes known as profit-sharing systems, although providing some remuneration supplementary to the regular earnings of the beneficiaries, do not bear any direct relation to the net profits of the enterprise and can not therefore be classified as involving the principle of profit sharing in the proper sense of the term. As a matter of fact, very few of the methods adopted by American employers for the purpose of augmenting the ordinary earnings of their employees can properly be called profit sharing as defined by the International Cooperative Congress.[1]

The term "profit sharing" was defined by the International Cooperative Congress, held in Paris, France, 1889, as "an agreement freely entered into by which the employees receive a share, fixed in advance, of the profits." The same congress defined the term "agreement" as covering "not only agreements binding in law but as including also cases where the agreement is only a moral obligation, provided it is honorably carried out." The term "profit" is defined as "the actual net balance or gain realized by the operations of the undertaking." A "share" is stated to be "a sum paid to the employee out of the profits," such share to be "dependent upon the amount of the profits." The share given to the employee "shall not be indeterminate"; that is, "it must not be a share which an employer fixes, at the end of some period, at his absolute discretion, as distinguished from a prearranged basis." The proportion of the total working force of a concern that must share in the profits in order to establish real profit-sharing conditions was stated to be "not less than 75 per cent."

Accepting the main principles laid down by the International Cooperative Congress, and modifying only certain details to suit conditions in this country, genuine profit sharing may be redefined in the following language:

Profit sharing is an agreement or understanding between an employer and his employees under which a fixed proportion (to be

[1] Bulletin de la Participation aux Bénéfices, Paris, Tome XIX, 1897, pp. 220–222, cited by D. F. Schloss, Methods of Industrial Remuneration, London, 1898, Ch. XVII.

definitely determined in advance) of the earnings of an enterprise is distributed to at least one-third of the total number employed.

The formulated definition, although comprehensive, is more elastic than that of the Cooperative Congress. It excludes from the category of profit sharing all schemes usually associated with the various phases of scientific management under which bonuses based on individual efficiency are paid. While it eliminates from consideration actual profit-sharing schemes the benefits of which are limited to a selected few of the better-paid executive or supervisory employees, it is not so exacting in this respect as the definition of the International Cooperative Congress.

Reformers and students of industrial problems, as well as employers, have frequently turned to profit sharing as holding out the hope of bringing about the longed-for industrial peace between capital and labor. President Emeritus Eliot of Harvard has voiced this hope in a series of addresses.[1]

In December, 1916, the Bureau of Labor Statistics published a bulletin showing the extent and nature of profit-sharing plans in the United States.[2] The principal data of the present article are shown in that report. The precise nature of the report may be inferred from the fact that in the course of its preparation all profit-sharing plants known to be in existence were visited for the purpose of examining carefully the nature of the schemes in operation, their objects, and the results achieved. Special emphasis was laid upon: (1) the extent of the application of the profit-sharing principle in American trade and industry; (2) the nature of existing plans as regards (*a*) factors determining proportion of profits to be distributed as well as the basis for their apportionment among the beneficiaries, and (*b*) conditions under which employees are allowed to participate; (3) the occupations or kinds of employment of the participating employees; (4) amount of benefits accruing to the profit sharers; (5) cost of the plans to the employers; and (6) results upon relations between capital and labor and the efficiency and stability of the working force.

This study reveals the fact that at the time of the investigation there were in operation in the United States 60 genuine profit-sharing plans. The number of employees coming under profit-sharing plans did not exceed 30,000—an insignificantly small group when compared with the total wage-earning population of the country.

The existing profit-sharing plans are of comparatively recent origin, only seven of them, or about one-ninth, having been estab-

[1] Eliot, Charles W., "Profit sharing," in Profit Sharing and Scientific Management. Four addresses. Boston, Efficiency Society of New England, 1914, pp. 3–9.

[2] Profit Sharing in the United States, Bulletin 208 of the U. S. Bureau of Labor Statistics.

lished prior to 1900. Twenty-nine, or almost one-half, have been established since 1911. Over two-thirds have been in operation less than 10 years. Twenty-one, or about one-third of all, were put into effect in 1914, 1915, and 1916. Over three-fifths of the profit-sharing establishments are located in three States—Massachusetts, New York, and Ohio—and more than one-half of these are in the North Atlantic section of the country.

The size of the 38 profit-sharing establishments studied, as indicated by the average number employed during a representative period, reveals the fact that 27, or 71 per cent of those studied, employed less than 300 people each, and that only 5, or slightly over 13 per cent, averaged more than 1,000. Of the 37 establishments reporting the proportion of the total employed who participated in the distributed profits, 19, or 51.4 per cent, reported 80 per cent and over participating; 13, or 35.1 per cent, reported 60 and under 80 per cent participating; 4, or 10.8 per cent, 40 and under 60 per cent; and only 1 reported 20 and under 40 per cent of all the employees sharing in the profits.

The benefits accruing to the participating employees as a result of the operation of the profit-sharing plans during one representative distribution period, in terms of a percentage of the regular earnings of participants, are shown in the following table:

PER CENT OF REGULAR EARNINGS RECEIVED AS SHARE OF PROFITS IN 34 PROFIT-SHARING ESTABLISHMENTS.

[Source: Bulletin 208 of the U. S. Bureau of Labor Statistics, p. 19.]

Classified per cent of earnings received as share of profits.	Number of establishments.	Classified per cent of earnings received as share of profits.	Number of establishments.
Under 2	1	20 and under 30	1
2 and under 4	6	30 and under 40	2
4 and under 6	4	40 and under 50	1
6 and under 8	7	50 and over	1
8 and under 10	5		
10 and under 15	5	Total	34
15 and under 20	1		

Under almost one-third of the plans the profit sharing was less than 6 per cent of the regular earnings of the participants. Slightly over one-third of the establishments paid amounts over and above earnings varying from 6 to 10 per cent of the earnings. In the remaining third of the establishments the profit-sharing distribution amounted to 10 per cent or more. Of the latter, five establishments paid 20 per cent or more.

Three main reasons may be presented as accounting for the relatively low profit-sharing distribution under the plans. They are: (1) the small proportions of their net profits that employers are ready

to share; (2) the rather large numbers of beneficiaries; and (3) the method used in some of the plans in determining the relative interests of employer and employees in the divisible fund. The last-mentioned reason is the least apparent and needs a brief explanation. In the plans under which the method of distribution accounts for the low profiting-sharing distribution it is usually provided that the net profits set aside for distribution are to be apportioned between employer and employees "in proportion to their respective interests." The employer, who is the formulator of the scheme, usually assumes that his interest in the divisible fund is represented by the amount of his capital, while that of the employees can best be measured by the labor pay roll. Aside from the fact that this assumption is unsound—the earning power of capital rather than its amount being more analogous, if at all comparable, to the labor pay roll—this method of determination of relative interests results in a distribution of the fund in a ratio of at least three to one in favor of capital, for the reason that the annual cost of labor seldom exceeds one-fourth of the amount of capital invested. That the method of determining the relative interests of the participants is largely responsible for the low dividends paid may still more clearly be seen from the fact that the only profit-sharing establishment in the United States (moderately successful) that has been making a considerable profit-sharing distribution (an average of 85 per cent for the period 1907 to 1916) used the earning power of capital rather than its amount to represent the employers' proportion. As a result of that, distributions were made at the ratio of about three to one in favor of labor. A computation based upon actual figures shows that had the usually prevailing notion of relative interests been applied in this establishment the distribution ratio would have been quite different, viz., five to one in favor of capital.

From a study based upon the facts and figures found in the recent report of the Federal Bureau of Labor Statistics, supplemented by personal observations, the following conclusions may be drawn:

(1) If labor difficulties are to be solved through considerable augmentations of the incomes of the employees, profit sharing, up to the present time, has done practically nothing. No one at all familiar with the nature of the present-day wage conflicts can possibly venture the opinion that even an all-round wage increase of 10 per cent will contribute materially toward the establishment of industrial peace and the creation of a general harmony of interests.

(2) If industrial peace is to be brought about by a better understanding between employer and employee and the development of mutual confidence based upon some degree of democratization of industry, profit sharing, as practiced to-day, offers little hope.

Profit-sharing employers are just as keen as nonprofit-sharing employers about the right to "hire and fire" and to run their business regardless of the opinions of their employees. Trade-unionism and collective bargaining are no more popular in profit-sharing establishments than elsewhere. In fact, no profit-sharing firm is known to have in operation any system of collective bargaining or of definitely established friendly relations with trade-unions. In this connection it may be of interest to observe that one of the oldest, most widely known, and most successful profit-sharing employers specifically excludes from the benefits of his scheme certain groups of his employees who through unionization have raised their rates of wages "to an unusually high point," on the theory (taught him by experience) that "good union men are, as a rule, poor cooperators." Instead of engendering good will, profit sharing, on account of its arbitrary character, under which employers unconditionally reserve to themselves the privilege to discontinue or modify the entire arrangement, may breed suspicion and discontent.

Although in general agreeing that their plans have greatly improved their relations with the employees and contributed considerably to the stabilization of their working force, profit-sharing employers disagree greatly as to the results achieved with reference to increasing the individual or collective efficiency of the participating employees. In all, only three out of 60 stated definitely that this has been the result. All of these have paid unusually high profit-sharing dividends to their employees in the past.

With the exception of profit-sharing employers, neither employer nor employees have as a rule any confidence in profit sharing. This fact is brought out in the following discussion. As far as the employees have given expression to their opinions, they have put themselves on record as opposed to it.[1] This attitude of employees toward such schemes is usually explained by the fact that, in the opinion of their leaders, profit-sharing plans have an inevitable tendency to obstruct the development of unionism and collective bargaining. Labor leaders state that these schemes make increased earnings uncertain, contingent wholly upon employers' profits, and payable only at their option. An informant belonging to the labor camp explained his opposition to profit sharing on the ground that "there is no sense in playing a game the rules and regulations of which are framed without the consent of one of the principal parties concerned, such rules, furthermore, being subject to change at any time without common consent." Here, of course, reference is had to the fact that all such plans reserve to the employer the right to abandon or

[1] For opinions of representative labor men see Profit Sharing by American Employers, report issued in 1916 by the Welfare Department of the National Civic Federation, pp. 233–243.

modify the provisions of the arrangement at will. "Workmen," he said, "prefer unqualified increases in wages to a problematical share in the employers' enterprises, in the management of which they have no influence." Employees, furthermore, are dissatisfied with profit sharing because under only one of the plans in existence are they granted the privilege of inspecting the books of the employer in order to convince themselves that the share due them has been distributed. Suspicion is further augmented because under a majority of the plans the prospective beneficiaries are not even given an inkling as to the specific proportion of the profits that their employers are willing to share. What is there, then, employees repeatedly say, to prevent an unscrupulous employer from juggling his profit-and-loss account in order to avoid the payment of the promised benefits?

The profit-sharing field is rather unique in the sense that under its arrangements additional duties carry with them no new rights. Under most of such schemes the employees are constantly reminded of the fact that they are no longer mere employees; that they are partners in the business, and are therefore expected to conduct themselves as such—to avoid any moves or acts, such as requests for better conditions and higher wages, that will inconvenience the business. These new duties, however, involve no established rights to benefits, for each of the schemes specifically reserves to the employer the right to (1) determine who shall participate and under what conditions, (2) to "hire and fire" at pleasure, and (3) to discontinue or modify the entire arrangement without notice or consent of the employees. Legally, shares and profits thus become mere gratuities which the employer may or may not dispense.[1]

That profit sharing is not popular with employers may readily be inferred from the little headway that such wage schemes have made in the United States as well as from the very small number of employees working under profit-sharing conditions. As a rule, employers have but little faith in profit sharing, because they can not see how distributions made upon any other basis than that of individual efficiency can possibly contribute to the augmentation of their profits. Most of the plans in existence owe their origin to the fact that employers wished to secure a more stable and dependable labor force in order to increase profits.

Considered as a direct stimulus to efficiency, real profit sharing can not possibly succeed, because under it individual shares bear no direct relation to anything but the earnings of the business. Again, some employers feel that from a strictly equitable viewpoint employees admitted to participation in the profits are morally bound to be willing to share in the losses of the business. Unfortunately,

[1] For a detailed discussion of the legal status of profit sharing, see Bulletin 208 of the U. S. Bureau of Labor Statistics, p. 6.

aside from the fact that ordinary workers do not earn enough to maintain a satisfactory standard of living,[1] much less to assist employers in meeting business losses, one may doubt the wisdom or the desirability of asking them to share in the losses of a business in the management of which they have no part.

The degree of effectiveness of these schemes depends directly upon the relative benefits accruing to the participants. For reasons specified elsewhere these benefits have been rather small, equivalent in many instances to less than what ordinarily grateful employers in thousands of establishments are in the habit of distributing as Christmas gifts in the form of cash bonuses, "gold pieces," and turkeys. No matter how large or small the distributed shares may be, the one-sidedness of the arrangement and its absolute control by the employer make the participants feel suspicious that they do not get all that they are entitled to. For entirely different reasons this dissatisfaction and lack of confidence in the value of the scheme appear also in the mind of the employer. Somehow or other he can not help feeling that from the point of view of greater profits more satisfactory results could be obtained with less pretense and annoyance through improvements in working conditions and increases in wages based upon the payment of bonuses for individual efficiency.

What, then, are the reasons for the existence of profit-sharing schemes, few though they be? In answer to this query the following are suggested:

(1) The advertising value of the schemes, the very name of which appeals to the popular mind;

(2) The nature of some business organizations under which it is rather difficult to correlate directly individual efficiency with its corresponding reward;

(3) The momentum of some of the older plans which makes profit sharing a sort of tradition;

(4) The belief of some employers that through the introduction of profit sharing the necessity of granting increases in wages may be obviated or temporarily halted;

(5) The effect of the schemes upon the labor turnover. Profit sharing, particularly in the establishments where the business is prospering and where distributions are made at regular intervals, does seem to have some beneficial influence upon the stability of the working organization. One profit-sharing employer who made a very careful study of the effects of his plan, describes this effect as follows: "It [profit sharing] works precisely like an increase in wages, but is more valuable because the employee, in order to receive his share, has to wait till the end of the distribution period, a fact that makes him hesitate before quitting, which would naturally involve the forfeiting of his share in the profits."

An examination of the causes specified by employers as having been responsible for the discontinuance of the profit-sharing plans

[1] See Conditions of Labor in American Industries, by W. Jett Lauck and Edgar Sydenstricker, New York, 1917, pp. 357–363.

that they are known to have had in operation reveals the interesting fact that many of the plans were abandoned because the new order of things very frequently failed to appeal to the prospective beneficiaries, who preferred the certainty of ordinary increases in wages to the uncertainty of the profits at the end of the distribution period. Demands on the part of the new partners for increased wages usually appeared unreasonable and unfair to the employer, who quickly decided to abandon the scheme. One student of this question has summarized the nature of profit sharing in its bearing upon this conflict of opinion as follows:

> It is obvious that if profit sharing is based upon favor, the so-called divisions of profits are nothing more nor less than Christmas presents or other periodical gifts, and therefore can not be considered as a serious economic factor.
>
> If profit sharing is predicated upon the mutual rights and obligations arising out of the relation of employer and employee, or if it is based upon some equitable right or obligation flowing out of that relation, it is then permitted to ask at what point in that relation, or under what circumstances, does the right to demand an increased wage cease and the right * * * to demand a share of profits begin?
>
> Unless there is some method of general application by which that point may be established, it comes down to this, that the employer—and he alone—can say when, to what extent, and under what circumstances the employee shall be permitted to exercise his supposed right—an arrangement which not only makes the employer the umpire but permits him to change the rules in the middle of the game.[1]

One can not but feel that the illogical character of profit sharing, as outlined briefly throughout this article as well as by the author quoted, presents one of the reasons why genuine profit sharing plays such a negligible rôle in the wage systems of advanced industrial countries. The effectiveness of any economic arrangement does not necessarily depend, of course, upon its power to appeal to logicians or jurists. Profit sharing has failed to become of any consequence among systems of supplementary payment for the simple reason that it does not appeal to the instinct of economic self-interest of capital or labor, and because its tendency to increase efficiency and profits, on the one hand, or to appreciably augment the earnings of the employees, on the other, has been very limited.

[1] Profit Sharing by American Employers, report issued by Welfare Department of the National Civic Federation, pp. 258–259, article by Francis X. Butler.

CHANGES IN RETAIL PRICES IN THE UNITED STATES.

Reports of retail prices of food collected by the Bureau of Labor Statistics for July 15, 1914, a date immediately preceding the outbreak of the European war, and for subsequent dates, show the movement of prices as affected by the war.

Flour made the greatest jump, the price being two and one-half times as much in June, 1917, as in July, 1914, and at this height the price was less than in May, when it was nearly two and three-fourth times the price at the outbreak of the war. In June, 1917, potatoes were more than two and one-quarter times as much as they were in July, 1914. Lard was 82 per cent higher, sugar was 79 per cent higher, but like flour was lower in June than in May. Corn meal was 77 per cent higher, bacon 56 per cent, and bread 55 per cent.

In July, 1915, all but five of the articles listed were lower than at the outbreak of the war. By July, 1916, all articles, excepting milk and potatoes had advanced, and at the beginning of 1917, even these two articles had gone up.

In the last month, from May 15 to June 15, three articles declined in price—hens 2 per cent, flour 8 per cent, and sugar 7 per cent.

The following table gives the average retail price of 18 articles of food. The retail prices of 9 other articles have been reported to the bureau only since January, 1915, and hence can not be included in this table.

AVERAGE RETAIL PRICES OF THE PRINCIPAL ARTICLES OF FOOD IN THE UNITED STATES, JULY 15, 1914, 1915, AND 1916, AND EACH MONTH, JANUARY TO JUNE, 1917.

Article.	Unit.	July.			1917					
		1914	1915	1916	Jan.	Feb.	Mar.	Apr.	May.	June.
Sirloin steak	Pound	$0.270	$0.265	$0.287	$0.276	$0.287	$0.295	$0.317	$0.322	$0.328
Round steak	do	.245	.240	.260	.247	.260	.267	.289	.296	.301
Rib roast	do	.208	.206	.220	.216	.225	.233	.252	.257	.261
Chuck roast	do	.175	.167	.179	.174	.186	.193	.212	.218	.222
Plate beef	do	.127	.123	.132	.132	.141	.146	.161	.166	.170
Pork chops	do	.222	211	.234	.236	.261	.279	.306	.306	.309
Bacon	do	.273	.270	.290	.296	.307	.333	.382	.416	.425
Ham	do	.279	.265	.323	.306	.318	.338	.365	.388	.391
Lard	do	.154	.145	.208	.214	.219	.238	.264	.278	.280
Hens	do	.219	.208	.241	.255	.267	.276	.290	.293	.288
Eggs	Dozen	.300	.278	.319	.544	.506	.349	.386	.398	.409
Butter	Pound	.343	.343	.355	.453	.469	.461	.508	.465	.469
Milk	Quart	.088	.087	.088	.099	.100	.100	.102	.105	.106
Bread	16-oz. loaf[1]	.055	.063	.062	.070	.071	.072	.075	.085	.085
Flour	½-bbl. bag	.787	1.003	.927	1.369	1.369	1.401	1.649	2.134	1.973
Corn meal	Pound	.031	.033	.033	.040	.041	.041	.047	.054	.055
Potatoes	Peck	.405	.223	.352	.587	.761	.778	.887	.919	.960
Sugar	Pound	.052	.070	.087	.080	.081	.087	.096	.100	.093

[1] 16 ounces, weight of dough.

CHANGES IN WHOLESALE PRICES IN THE UNITED STATES.

Figures compiled by the Bureau of Labor Statistics show that the wholesale prices of many commodities have more than doubled in the United States since the outbreak of the European war. This is particularly true of grains and metals, immense quantities of which have been sent abroad. As compared with the prices prevailing in July, 1914, the month immediately preceding the opening of hostilities, wheat and flour in the Minneapolis market had increased in June, 1917, more than 200 per cent; corn in Chicago had increased more than 140 per cent; corn meal in New York had increased more than 170 per cent; and good to choice potatoes in Chicago had increased more than 140 per cent. Other articles showing large increases were wool (Ohio, fine fleece, scoured), 134.6 per cent; worsted yarn (2–32s, crossbred stock), 138.5 per cent; bituminous coal (run of mine at Cincinnati), 172.7 per cent; electrolytic copper, 142.5 per cent; pig lead, 194.9 per cent; pig tin, 102.6 per cent; Bessemer pig iron, 267.1 per cent; and steel billets, 419.7 per cent.

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

WHOLESALE PRICES, JULY, 1915 AND 1916, AND JANUARY TO JUNE, 1917, COMPARED WITH JULY, 1915.

Actual average monthly prices.

Article.	Unit.	July.			1917					
		1914	1915	1916	Jan.	Feb.	Mar.	Apr.	May.	June.
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
Beef, fresh, native steers...	Lb.....	.135	.132	.141	.138	.141	.149	.160	.160	.162
Beef, salt, mess.....	Bbl.....	17.250	17.500	18.250	23.250	23.250	24.313	26.250	29.600	30.500
Hogs, heavy.....	100 lbs..	8.769	7.281	9.825	10.955	12.575	14.794	15.795	16.088	15.706
Bacon, short clear sides....	Lb.....	.141	.111	.157	.165	.175	.196	.218	.242	.242
Pork, salt, mess.....	Bbl.....	23.625	18.500	27.167	32.250	33.250	35.438	39.000	41.450	41.500
Lard, prime contract.....	Lb.....	.102	.081	.131	.161	.172	.200	.213	.225	.212
Wheat, No. 1 northern.....	Bu.....	.897	1.390	1.170	1.917	1.808	1.984	2.381	2.981	2.694
Flour, standard patent.....	Bbl.....	4.594	7.031	6.100	9.215	9.069	9.631	11.619	14.880	13 894
Corn, No. 2, mixed.....	Bu.....	.710	.783	.808	.982	1.016	1.123	1.397	1.625	1.716
Meal, fine yellow.....	100 lbs..	1.425	1.725	1.900	2.650	2.750	2.750	3.100	3.700	3.900
Potatoes, white.....	Bu.....	1.206	.444	.863	1.795	2.469	2.275	2.669	2.705	2.950
Sugar, granulated.....	Lb.....	.042	.058	.075	.066	.069	.071	.082	.079	.075
Hides, packers'.....	Lb.....	.194	.258	.270	.335	.318	.305	.305	.315	.330
Cotton, upland, middling..	Lb.....	.131	.092	.130	.176	.163	.186	.203	.208	.255
Cotton yarn, carded, 10/1...	Lb.....	.215	.160	.253	.340	.320	.310	.360	.365	.375
Wool, fine fleece, scoured...	Lb.....	.575	.652	.761	1.000	1.087	1.130	1.152	1.304	1.348
Worsted yarn, 2-32s.....	Lb.....	.650	.850	1.100	1.250	1.250	1.370	1.300	1.400	1.550
Coal, bituminous.....	2,000 lbs.	2.200	2.200	2.200	4.500	5.000	5.000	5.000	6.000	6.000
Copper, electrolytic.....	Lb.....	.134	.199	.265	.295	.330	.363	.340	.310	.325
Pig lead.....	Lb.....	.039	.058	.069	.075	.085	.095	.094	.099	.115
Pig tin.....	Lb.....	.311	.391	.389	.430	.490	.515	.543	.585	.630
Pig iron, Bessemer.....	2,240 lbs.	14.900	14.950	21.950	35.950	35.950	37.700	42.200	45.150	54.700
Steel billets.....	2,240 lbs.	19.000	21.380	41.000	63.000	65.000	66.250	73.750	86.000	98.750
Spelter.....	Lb.....	.051	.220	.113	.098	.099	.109	.108	.095	.096
Petroleum, crude.....	Bbl.....	1.750	1.350	2.600	2.850	3.050	3.050	3.050	3.100	3.100

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

Relative prices.

Article.	July.			1917.					
	1914	1915	1916	Jan.	Feb.	Mar.	Apr.	May.	June,
Cattle, good to choice steers	100.0	99.9	108.3	114.2	120.7	128.7	133.5	135.3	136.1
Beef, fresh, native steers	100.0	97.4	104.7	101.9	104.7	110.4	118.5	118.5	119.6
Beef, salt, mess	100.0	101.4	105.8	134.8	134.8	140.9	152.2	171.6	176.8
Hogs, heavy	100.0	83.0	112.0	124.9	143.4	168.7	180.1	183.5	179.1
Bacon, short clear sides	100.0	78.8	111.3	117.3	124.3	139.3	154.8	171.8	171.8
Pork, salt, mess	100.0	78.3	115.0	136.5	140.7	150.0	165.1	175.4	175.7
Lard, prime contract	100.0	79.1	128.3	157.1	168.4	195.4	208.3	220.0	207.2
Wheat, No. 1 northern	100.0	155.0	130.5	213.6	201.5	221.2	265.5	332.2	300.2
Flour, standard patent	100.0	153.1	132.8	200.6	197.4	209.7	252.9	332.9	302.4
Corn, No. 2, mixed	100.0	110.2	113.7	138.2	143.1	158.2	196.7	228.8	241.6
Meal, fine yellow	100.0	121.1	133.3	186.0	193.0	193.0	217.5	259.6	273.7
Potatoes, white	100.0	36.8	71.5	148.8	204.7	188.6	221.2	224.2	244.5
Sugar, granulated	100.0	138.6	178.6	157.6	163.3	168.1	194.0	189.0	179.5
Hides, packers'	100.0	132.9	139.3	172.9	163.8	157.4	157.4	162.5	170.3
Cotton, upland, middling	100.0	70.1	99.3	134.3	124.2	141.6	154.8	158.1	193.8
Cotton yarn, carded, 10/1	100.0	74.4	117.4	158.1	148.8	144.2	167.4	169.8	174.4
Wool, fine fleece, scoured	100.0	113.5	132.4	174.1	189.2	196.8	200.6	227.0	234.6
Worsted yarn, 2-32s	100.0	130.8	169.2	192.3	192.3	195.4	200.0	215.4	238.5
Coal, bituminous	100.0	100.0	100.0	204.5	227.3	227.3	227.3	272.7	272.7
Copper, electrolytic	100.0	148.4	197.8	220.1	246.3	270.5	253.7	231.3	242.5
Pig lead	100.0	147.4	175.6	192.3	217.9	243.6	239.7	253.3	294.9
Pig tin	100.0	125.7	125.0	138.3	157.6	165.6	174.4	188.1	202.6
Pig iron, Bessemer	100.0	100.3	147.3	241.3	241.3	253.0	283.2	303.0	367.1
Steel billets	100.0	112.5	215.8	331.6	342.1	348.7	388.2	452.6	519.7
Spelter	100.0	435.6	222.8	193.1	195.6	215.4	212.9	188.1	190.7
Petroleum, crude	100.0	77.1	148.6	162.9	174.3	174.3	174.3	177.1	177.1

CONDITIONS OF TRADE IN FOOD PRODUCTS.

REPORT OF THE GRAND JURY EMPANELED IN THE UNITED STATES DISTRICT COURT FOR THE NORTHERN DISTRICT OF ILLINOIS AT CHICAGO AT THE JUNE TERM, A. D. 1917, AS TO CONDITIONS OF TRADE IN FOOD PRODUCTS.[1]

The grand jurors, owing to the brevity of the term of court for which they are empowered to act and the country-wide extent of the conditions disclosed, have been unable to make that thorough examination which would warrant presenting indictments against individuals responsible for the present trade conditions in certain lines, but, enough evidence appearing to show in outline what those conditions are and what are the systems of transacting business under which they are produced, the jurors feel that they should at least make a report to the court upon what they have found.

CANNED GOODS.

These goods are not classed as perishable and do not require cold storage. Canners of vegetables usually dispose of their product by future sales before the vegetables are grown or canning operations begin. The goods get to the consumer through brokers, wholesalers, jobbers, and retailers. The canners, brokers, wholesalers, and jobbers have associations, which select committees whose function is to meet together at intervals. The canners, wholesalers, and jobbers have devised some means for insuring complete cooperation among themselves, which results in keeping the canner from dealing directly with the consumer or with the retailer. Wholesalers and jobbers will not buy from canners in most cases otherwise than through brokers. If retailers attempt to resist the combination by purchasing directly from the canner, they find it difficult or impossible to do any further business with the wholesalers or jobbers as to other groceries.

This situation compels the consumer to pay the expense of maintaining these middlemen, and in times like the present, when an unusual demand for food products exists and is likely to continue, these middlemen exert the power that inheres in this system to extort unconscionable profits from consumers, with no proportionate benefit to those who furnish the principal service, to wit, the farmers, canners, and such retailers as are satisfied with a reasonable profit above the cost.

[1] From the Congressional Record, July 6, 1917, pp. 5188, 5189.

To illustrate the foregoing we cite the increase of the price of canned tomatoes and corn in passing through the hands of these middlemen during the past year:

Canned tomatoes were sold by the canners in the spring of 1916 through brokers for future delivery to wholesalers and jobbers at 90 cents per dozen cans. These same tomatoes are being sold to-day by wholesalers and jobbers to retailers at $2.25 and more per dozen, and consumers are now getting one can for 25 cents instead of the two or three cans they got for that sum prior to this season. Cans and labels, being furnished by the canners, do not enter into this increase in cost in the hands of the middlemen.

Canned corn, which was sold in 1916 by the canner to the wholesaler and jobber at 65 cents per dozen, is selling to the retailer at $1.75 per dozen, and the consumer is paying a proportionately high price.

In view of this situation in the canned-goods trade and of the existence of similar conditions in the trade in other food products and necessaries we urge the passage of laws to eliminate these conditions and to reduce prices to a normal basis as soon as possible.

Furthermore, in consequence of these conditions, brokers, wholesalers, and jobbers are in a position to, and many of them do, hoard up, speculate in, and demand excessive prices for, these commodities; and no doubt they are in the same position with reference to many of the other necessaries of life handled by them.

BUTTER.

Because Elgin was at one time a creamery center the people of the United States continue to follow prices quoted as "Elgin" prices, although very little butter is now made or legitimately traded in there. It seems that a few traders and dealers, most of whom are Chicago traders, take advantage of this situation to go to Elgin once a week and make a few trades on the Elgin Board of Trade, and thus establish a price for butter for those who follow Elgin quotations throughout the country. The "board" opens at 11.45 and closes at 12 noon on Saturday of each week. Practically all of the trades made on the "board" are made by these Chicago dealers who go to Elgin to attend this 15-minute session. It is a question whether the Elgin "board" is a real bona fide market for the purchase and sale of butter, it appearing that it is merely a place where a few trades are made as a basis for Elgin quotations by men who are in most cases Chicago traders, who could make those sales in Chicago without taking the trouble to go to Elgin if their only motive is to buy and sell butter.

As shown by the minutes of the 24 meetings of the Elgin board from January 6 to June 16, 1917, an average of four traders made an average of less than two trades a week affecting an average of 51 tubs of butter sold each week. As against these 51 tubs a week handled on the board at Elgin, it appears that during the same period an average of 53,000 tubs have been handled each week in Chicago.

COLD STORAGE.

It has been the practice of cold-storage warehouse companies to lend large amounts of money on perishable food products, such as butter, eggs, poultry, etc., that go into their cold-storage warehouses. This practice leads to speculation by other than legitimate dealers, and tends to increase the cost to the consumer. It is the opinion of this grand jury that some legislation should be passed prohibiting this practice, and also prohibiting the cold-storage warehouses from borrowing money on their own warehouse receipts on which they themselves have already made loans.

For the purpose of making public the amounts of food products in cold storage it is our opinion that legislation should be passed requiring all cold-storage warehouse companies to make reports under oath to the proper governmental department at specified times, setting forth in detail all food products held in storage by them, and whenever required to do so to furnish the names of those for whom such products are being held.

And further, that the period during which food products may be held in storage should be limited to a reasonable specified time to prevent the carrying of such products from one season to another, which practice has a tendency to limit the supply and increase the price at certain times of the year.

In addition to the reports to the Government from cold-storage warehouses, reports should be required under oath from all persons making use of railroad cars for storage purposes; that is to say, holding of products on the track after a reasonable time for unloading.

Many retail dealers in selling food products to the consumer often continue to charge high prices after wholesale prices have dropped, thereby securing illegitimate and unfair profits. It is our opinion that some method of publishing the wholesale price of food products should be instituted so that the housewife may be informed of the value of foods and will know when she is being charged extortionate prices out of line with the price which the retailer is paying the wholesaler.

WHOLESALE DEALERS IN FOOD PRODUCTS.

Some wholesalers and jobbers in food products urge retailers to advance prices to the consumer—advising them to put on higher

prices, which gives the wholesaler a basis for charging higher prices to the retailer. To illustrate, one of the largest wholesale dealers in Chicago sent out a circular to its salesmen containing the following paragraphs:

Our customers, in particular, have very unusual profits within their grasp at this moment. "Will they throw them away or tuck them away?"

Jobbers are affected; they are financially interested. They urge that the greatest haul yet made by the retail grocery world be converted into tangible assets. Wholesale houses are not legally appointed custodians or guardians for anybody, but they do have an interest at this time, one that is definable and that must be apparent to all.

Of what earthly use are "futures" if the benefits are wantonly wasted?

No man ever got very far on the road to competency who was a wise buyer but a spineless seller.

Will the grocer who has long lamented the scantiness of his profits let up now long enough to bring in the heaping basket left on his doorstep?

Our representatives should make themselves heard at once on this readjusting of retail prices.

Another sent out a circular from which we quote as follows:

Raise your prices now on everything we have advised you will advance. The goods are worth more money now than they are bringing. As soon as our prices advance, yours must. We are giving you the benefit of our purchases to give you the extra profit. You can get the extra price this week as well as next.

Practices of this kind indicate the necessity of legislation which will absolutely put a stop to the exploitation of war conditions to raise prices to the consumer for the benefit of the few who are handling food products.

CHARLES M. GORGENSON,
Foreman.

Indorsed: Filed July 2, 1917, at — o'clock — m. T. C. MacMillan, clerk.

IN THE UNITED STATES DISTRICT COURT FOR NORTHERN DISTRICT OF ILLINOIS, EASTERN DIVISION.

I, T. C. MacMillan, clerk of the District Court of the United States of America for the northern district of Illinois, do hereby certify the above and foregoing to be a true and correct copy of the report of the grand jury to the court as to conditions of trade in food products as same appears from the original filed in said court on the 2d day of July, A. D. 1917, and now remaining in my custody and control.

In testimony whereof I have hereunto set my hand and affixed the seal of said court at my office in Chicago, in said district, this 2d day of July, A. D. 1917.

[SEAL.] T. C. MACMILLAN,
Clerk.

PROFITS IN FOOD IN CANADA.

That two firms in Canada have been taking excessive profits in bacon and eggs, the "margins" running into millions of dollars, is disclosed in a report just submitted to the Canadian Government by W. F. O'Connor, the cost-of-living commissioner. The following account is taken from the Christian Science Monitor of July 14, 1917:

The reports state that Flavelles (Ltd.) took a margin of 5.05 cents per pound on close on 100,000,000 pounds of bacon, being a margin of nearly $5,000,000, during 1916, and in the previous year a margin of 3.67 cents per pound on 57,000,000 pounds, the commissioner adding there is no evidence of correspondingly increased storage or other costs. Ninety-four million pounds, at least, of the sales of 1916 were for export. The margin of 3.67 was sufficient, satisfactory, and profitable in 1915; why not in 1916?

Referring to the Matthews-Blackwell Co., the report says that it will be observed that the company sold 42,000,000 pounds of bacon. Its margin was 3.56 cents per pounds. The margin of its competitors was small. They were, however, feeding the home market. Its need was not so great.

In another part of the report the commissioner states that in 1914 these two companies exported more than half the total bacon exported by Canada. Their control of the bacon situation has been much strengthened since. Possibly no more striking example of a monopoly of any commodity can be cited from the trade records of any country supplying the allies with food. He points out that the greater part of the spread between the price paid to the producer and that paid by the consumer arises after the products are out of cold storage; and this draws attention to the fact that two companies have 80 and 40 retail stores each. He points out that this gives them an immense advantage in competing with other retail stores dealing in the same lines. Upon this point he comments:

"The proceeds from by-products ought to enable abattoir companies to sell on a much smaller margin than can the small butcher, and if necessary to pay a higher price to the producer than the smaller buyer can afford, but nothing disclosed upon the investigation indicated that either of these natural results had, in fact, followed."

In dealing with the egg situation Mr. O'Connor states that in partial justification of cold-storage companies generally it is necessary to state that the war-time advance in the average profit of eggs has been greatly influenced by excessive profits derived by two particular companies.

The margin of profit taken by Flavelles on ham was 4.91 cents per pound in 1916, and by Matthews-Blackwell 6.61 cents per pound, which was the highest in Canada.

RETAIL PRICES IN THE SCANDINAVIAN CAPITALS.

The Swedish Labor Office has for some time compiled comparative statements of retail prices for the three Scandinavian capitals and presented them in its monthly journal. Two tables set forth the results of its compilation, the first showing actual monthly prices of 22 articles of ordinary household consumption and the second

a comparison of the current prices with the prewar prices prevailing in July, 1914. The quality of the articles is stated to be roughly similar, inasmuch as habits of consumption in the three Scandinavian countries are somewhat alike. The prices quoted for Christiania and Stockholm are monthly averages, and those for Copenhagen averages for the first week of each month. The two tables referred to are as follows:

ACTUAL AND RELATIVE PRICES OF 22 COMMODITIES OF HOUSEHOLD CONSUMPTION IN THE CAPITAL CITIES OF THE SCANDINAVIAN COUNTRIES, JULY, 1914, JULY, 1916, FEBRUARY AND MARCH, 1917.

[Source Sociala Meddelanden utgivna av K. Socialstyrelsen, Stockholm, 1917. No. 4, pp. 465, 466.]

Actual average prices.

Article.	Unit.	Stockholm.				Christiania.				Copenhagen.			
		July, 1914.	July, 1916.	Feb., 1917.	Mar., 1917.	July, 1914.	July, 1916.	Feb., 1917.	Mar., 1917.	July, 1914.	July, 1916.	Feb., 1917.	Mar., 1917.
		Cts.	Cts.	Cts.	Cts.	Cts.	Cts.	Cts.	Cts.	Cts.	Cts.	Cts.	Cts.
Milk, whole	Qt.	4.3	5.3	6.1	6.6	4.8	6.6	[1] 6.8	[1] 6.8	4.8	6.1	7.6	7.6
Butter, creamery	Lb.	29.9	36.5	[1] 41.1	45.6	31.1	40.1	47.4	47.3	28.6	36.6	47.3	47.3
Oleomargarine, vegetable	Lb.	16.9	24.3	.....	.....	17.0	20.9	25.6	25.5	15.2	19.9	20.9	20.9
Eggs, strictly fresh	Doz.	24.1	35.5	61.3	52.3	28.9	52.9	90.0	63.0	24.1	42.6	66.9	45.8
Potatoes	Bu.	66.1	60.4	141.7	184.3	98.2	100.1	[2] 86.9	[2] 86.9	47.2	113.3	92.6	92.6
Peas, yellow	Lb.	3.2	6.3	10.0	13.6	4.9	11.5	13.4	13.7	4.9	10.1	10.8	11.2
Flour:													
Wheat	Lb.	3.9	4.5	[3] 5.0	[3] 5.0	3.9	5.3	7.7	8.0	3.2	4.5	5.6	6.1
Rye	Lb.	2.9	3.3	[1] 4.3	[1] 4.3	2.4	4.7	6.7	7.2	.....	.....	.....	.....
Oatmeal	Lb.	4.1	6.0	10.6	.....	4.4	6.6	8.5	9.1	4.7	8.9	9.2	9.2
Bread:													
Rye	Lb.	4.9	7.4	7.9	8.9	2.9	4.7	6.3	6.8	[4] 1.8	[4] 2.7	[4] 2.7	[4] 2.7
Wheaten, with milk	Lb.	8.0	10.3	12.2	([5])	.....	6.7	8.5	8.5	4.9	5.8	8.1	8.1
Beef:													
Steak	Lb.	15.2	31.7	28.6	27.1	16.0	39.8	35.5	35.4	[6] 17.0	[6] 37.9	[6] 33.4	[6] 32.9
Soup	Lb.	12.4	23.9	23.0	22.1	15.3	36.2	31.4	31.5	[7] 13.4	[7] 33.6	[7] 23.7	[7] 23.7
Veal:													
Steak, fat	Lb.	17.6	29.4	30.4	29.1	17.1	39.5	38.3	36.7	[8] 17.0	[8] 35.7	[8] 28.6	[8] 27.5
Steak, tender	Lb.	12.3	19.7	20.8	20.7	10.1	27.5	22.4	24.4	[9] 13.4	[9] 31.8	[9] 24.3	[9] 24.1
Pork:													
Fresh	Lb.	18.1	28.6	34.3	34.0	17.6	34.9	43.5	43.9	[10] 13.4	[10] 14.6	[10] 14.6	[10] 14.6
Salt	Lb.	18.2	31.1	34.3	34.4	19.4	37.4	43.5	43.5	.....	[11] 20.7	[11] 20.7	[11] 20.7
Coffee, Santos	Lb.	20.2	24.7	58.3	39.5	26.0	27.8	32.6	33.6	25.5	30.0	34.3	34.2
Sugar, loaf	Lb.	7.8	[1] 8.3	[1] 8.3	[1] 8.3	6.9	13.1	13.4	13.6	5.2	6.3	[1] 6.3	[1] 6.3
Kerosene	Gal.	18.3	27.4	29.4	32.5	18.3	29.4	29.4	29.4	18.3	21.3	21.3	25.4
Coal	Bu.	22.6	49.6	61.4	61.4	17.8	62.3	[1] 56.7	[1] 56.7	16.1	64.2	65.6	65.6
Coke, gas	Bu.	12.6	26.9	31.2	31.2	15.6	33.5	33.5	[12] 38.7	11.8	26.0	33.1	33.1

[1] Maximum price by law.
[2] Maximum price by law; beginning Mar. 20, 1917, increased to $1.073 per bushel.
[3] Ground to 25 per cent; maximum price from Jan. 15, 1917.
[4] Price per pound, baked in 4-kilogram (8.8 pound) loaves.
[5] Since the use of wheat flour in bread has been regulated by law in Sweden, pure wheat bread has not been on the market. A bread made of a mixture of wheat and rye flour sold in July, 1914, for 6.2 cents per pound, in July, 1916, for 8.9 cents per pound, and in February and March, 1917, for 9.7 and 11.7 cents per pound, respectively.
[6] Lowest price.
[7] Beef, forepart, average of highest and lowest price.
[8] Veal, forepart, highest price.
[9] Veal, forepart, lowest price.
[10] Pork, shoulder, fresh; maximum price from July, 1916.
[11] Pork, salt, breast, maximum price by law.
[12] Beginning Mar. 26, 75.6 cents per bushel.

ACTUAL AND RELATIVE PRICES OF 22 COMMODITIES OF HOUSEHOLD CONSUMPTION IN THE CAPITAL CITIES OF THE SCANDINAVIAN COUNTRIES, JULY, 1914, JULY, 1916, FEBRUARY AND MARCH, 1917—Concluded.

Relative prices.

[July, 1914=100.]

Article.	Stockholm.				Christiania.				Copenhagen.			
	July, 1914.	July, 1916.	Feb., 1917.	Mar., 1917.	July, 1914.	July, 1916.	Feb., 1917.	Mar., 1917.	July, 1914.	July, 1916.	Feb., 1917.	Mar., 1917.
Milk, whole	100	124	141	153	100	137	142	142	100	126	158	158
Butter, creamery	100	122	137	152	100	129	152	152	100	128	166	166
Oleomargarine, vegetable	100	144	.....	.....	100	123	151	150	100	131	138	138
Eggs, strictly fresh	100	147	254	217	100	183	311	218	100	177	277	190
Potatoes	100	91	214	260	100	102	88	88	100	240	196	196
Peas, yellow	100	200	315	327	100	238	275	283	100	208	223	230
Flour:												
Wheat	100	116	128	128	100	138	197	206	100	142	177	192
Rye	100	113	146	146	100	195	275	295	.....	.....	.....	.....
Oatmeal	100	144	256	.....	100	150	194	208	100	187	195	195
Bread:												
Rye	100	153	163	183	100	163	217	233	100	147	147	147
Wheaten, with milk	100	129	152	(1)	.....	.....	.....	.....	100	120	168	168
Beef:												
Steak	100	209	188	178	100	248	221	220	.....	.....	.....	.....
Soup	100	193	185	178	100	237	205	206	100	235	156	155
Veal:												
Steak, fat	100	167	172	165	100	230	223	214	100	210	168	161
Steak, tender	100	160	169	168	100	272	222	242	100	238	182	180
Pork:												
Fresh	100	158	189	188	100	198	247	249	100	109	109	109
Salt	100	171	188	189	100	193	224	224	.....	.....	.....	.....
Coffee, Santos	100	122	289	196	100	107	125	129	100	118	134	134
Sugar, loaf	100	106	106	106	100	189	193	196	100	121	121	121
Kerosene	100	150	161	178	100	161	161	161	100	117	117	139
Coal	100	220	272	272	100	351	319	319	100	400	409	409
Coke, gas	100	214	248	248	100	215	215	248	100	220	280	280
Average for all commodities	100	152	200	195	100	185	202	202	100	181	186	183

[1] The relative price of bread baked from a mixture of wheat and rye flour shows an increase of 88 per cent in March, 1917, over the price prevailing in July, 1914.

TOXIC JAUNDICE IN MUNITION WORKERS: A REVIEW.[1]

BY ALICE HAMILTON, A. M., M. D.

Toxic jaundice of industrial origin was, up to the beginning of the present war, practically always a form of arsenic poisoning, caused usually by exposure to arseniureted hydrogen gas evolved as a result of the action of the heavy acids on metals when either acid or metal contains arsenic as an impurity. A few cases of toxic jaundice had also been observed in Great Britain among workers in nitrobenzene factories or in those who had to handle nitrobenzene, but it is not characteristic of nitrobenzene, which acts primarily on the blood and produces destructive changes rapidly and intensely. It is only in relatively slow cases that jaundice occurs.

A few months after the outbreak of the war toxic jaundice appeared among the men employed in a large airplane works in England, and a few months later cases developed among workers in trinitrotoluol (TNT). The disease was then added to the list of those which must be notified to the chief inspector of factories, and the records of such cases accumulated, until by July, 1916, 70, with 12 deaths, had been reported from airplane works, and during the year 1916 no less than 181 from trinitrotoluol works, with 52 deaths. The startling increase of this almost new industrial disease led to much careful study by physicians, pathologists, and sanitarians, and in the first month of the present year a discussion of the subject was held at the instigation of Dr. T. M. Legge by members of the Royal Society of Medicine of Great Britain, the results of which have just been published in pamphlet form. The series of papers constitutes a full description of this little known industrial disease, and a discussion of its symptoms, pathology, treatment, and prevention. For American physicians and public-health authorities this information is of the greatest value, since the production and handling of trinitrotoluol is increasing enormously in this country, and we have every reason to expect poisoning among the workers who handle it.

[1] The Origin, Symptoms, Pathology, Treatment, and Prophylaxis of Toxic Jaundice Observed in Munition Workers. Being a Discussion by the Sections of Medicine, Pathology, and Epidemiology of the Royal Society of Medicine. January, 1917. Speakers: Dr. T. M. Legge (H. M. Medical Inspector of Factories), Viscount Chetwynd, Capt. Matthew J. Stewart, R. A. M. C., Dr. Benjamin Moore, F. R. S., Dr. Bernard H. Spilsbury, Dr. P N. Panton, Dr. H. M. Turnbull, Dr. I. Feldman, Dr. E. L. Collis, Dr. W. J. O'Donovan, Maj. F. S. O'Reilly, R. A. M. C., S. M. O., Maj. H. Morley Fletcher, R. A. M. C. (T.), Fleet Surg. R. C. Munday, R. N., and others; with Summary of the Discussion by Surg. Gen. H. D. Rolleston, R. N., C. B. Longmans, Green & Co., London, 1917. 106 pp.

The following is a brief abstract of the chief contributions on the various aspects of this form of industrial poisoning:

INCIDENCE.

Until May, 1916, the incidence of trinitrotoluol poisoning was not striking; then, as work in the shell-filling plants increased and the weather grew hotter, the number of cases continued to rise till it reached a maximum in October, falling during the last two months of the year. Undoubtedly more accurate and thorough notification of the cases as the year progressed accounts in part for the increase. The record for 1916 is given by the chief medical inspector, Dr. Legge.

NUMBER OF CASES OF TOXIC JAUNDICE FROM TNT, INCLUDED IN RETURNS, JANUARY TO DECEMBER, 1916.

Month.	Males.		Females.		Total.	
	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
January	.....	.....	1	1	1	1
February	.....	.....	.....	.....	.....	.....
March	4	2	1	1	5	3
April	1	.....	2	.....	3	.....
May	2	.....	3	3	5	3
June	.....	.....	8	2	8	2
July	7	2	9	3	16	5
August	25	4	12	4	37	8
September	11	5	9	3	20	8
October	10	4	31	9	41	13
November	5	4	15	3	20	7
December	5	.....	21	2	26	2
Total	70	21	112	31	[1] 181	52

[1] This is total given in the report. The correct total, according to the details, is 182.

Since the numbers of men and women employed "can not, for obvious reasons, be published," it is impossible to tell anything about the influence of sex upon the occurrence of poisoning, but it is plain that the proportion of deaths to total cases is about the same for the two sexes, being 30 per cent for men and 28 per cent for women. The statement is made that young people are far more susceptible than the more mature.

Although the total number of workers exposed to TNT is not given, it is possible to gain some idea of the incidence of poisoning from the records of individual factories. In one, 1,176 workers were examined each fortnight for the period of their employment, from 2 to 12 months. Of these 138, or 11.5 per cent, showed toxic symptoms of cyanosis or jaundice. On the other hand, a second physician reported that in the works with which he was connected only one case of jaundice had developed in more than 12 months, though some 12,000 persons are employed.[1]

[1] The reason for this difference is given in the section on Prevention.

Filling shells, bombs, and hand grenades with TNT or with a mixture of TNT and ammonium nitrate in molten or powder form appears to be more dangerous work than manufacturing the TNT. Only seven of Dr. Legge's 181 cases developed in the latter kind of works.

Statistics seem to show that certain kinds of employment in shell-filling plants are specially dangerous. Thus one physician reports that of those whose work involved direct contact with TNT there was more poisoning among the ones whose hands were oily or grease-covered, than among those with dry hands. Of the first 17 per cent suffered, of the second 11 per cent.

It is suggested that weather has some influence on TNT poisoning. A curve is presented by Viscount Chetwynd, managing director of a filling factory, showing the correspondence of numbers of cases with the total quantity of TNT used and the occurrence of low and high barometric pressures. It is a pity that these two last features, so utterly different, should have been combined, for it is quite impossible to determine how large a part is played by either. Apparently the cases fall with a low barometer and increase with a rising atmospheric pressure, the explanation being that a low barometer with decreased specific gravity of the air allows the heavy fumes to fall below the level of the workers' heads, while a high barometer means that the fumes can remain at a higher level.

The length of exposure before poisoning occurs differs in individuals, for idiosyncrasy plays an important part. The time in which sickness may develop varies from 3 days to 17 months, but in the majority of cases it develops during the third month. A curve of the reported cases shows the highest peak to be attained during this month, after which there is a sharp and progressive decline, so that by the fifth month the cases have almost disappeared. It may be that the susceptibles are being eliminated, or that workers are in process of acquiring immunity. The suggestion is made that it would be well to make systematic blood examinations of those apparently long immune and compare the results with those who have only just begun to work.

MODE OF ENTRANCE OF POISON.

There are those who lay special stress on the danger of fumes and others who believe fumes are negligible and that the great danger lies in skin absorption from handling the TNT. The dry powder is said to give off fumes at as low a temperature as 32° C. or 89.6° F., and the same authority, Viscount Chetwynd, suggests that they consist of nitrous anhydride (N_2O_3) or a compound thereof. On the other hand, the amount of nitrous fumes in the air is said by another

observer, Dr. Moore, to be very small, as is also the amount of dust. He collected air in a fume and dust absorption apparatus for 12 hours at double the rate of ordinary respiration and found only from five to six milligrams of TNT, an amount which he and his assistant multiplied by ten and swallowed daily for one or two weeks without any discomfort, though the compound did appear in their urine.

Moore believes strongly that the skin is the only important portal of entrance. He rubbed TNT on his hands, washed them at once, but found TNT in his urine for 10 days after. To this assertion Dr. Feldman opposes the statement that the substance present in the urine is not TNT, nor does its presence denote TNT poisoning, for it is absent in some of the most pronounced cases and is found in workers who show no clinical symptoms. On the whole, the skin is generally regarded as the principal channel of entrance, but it is considered wise to provide also against fumes, since poisoning among the workers at the melting pots is sufficient to point to a certain amount of danger from breathing the fumes.

SYMPTOMATOLOGY OF TNT POISONING.

Three types of poisoning, among others, are described by Dr. W. J. O'Donovan, of the Ministry of Munitions. First, there is an irritative gastritis that develops early, soon after beginning work, and is caused, he believes, by swallowing small quantities of TNT, which exert an irritating action on the stomach. The latter accustoms itself soon to these small doses, and usually a purge and a short holiday from work bring about a complete cure. The incidence of this form has been lessened decidedly by the provision of hot cocoa or milk in the morning as soon as the workers arrive.

Toxic gastritis is far more disabling. In the summer of 1916 there were hundreds of these cases in England, but they fell off as the weather grew cold. Pain is the chief and may be the only symptom, a colicky pain that bears no relation to food, is not helped by starvation nor by warm food, is not usually accompanied by vomiting nor relieved by it, but is helped by rest. There is persistent nausea and aversion to food and, following this, loss of weight. Constipation is the rule, diarrhea rare. There are few signs of disease, but the pallor, apathy, muscular weakness, dull eyes, and drawn, wizened faces, make these patients easily recognizable to an experienced eye. The clean tongue is a help in diagnosis. High-colored urine, not methemoglobinuria, is commonly noted. Cases of gastritis, showing cyanosis of lips or tongue, are as a rule severe. Convalescence is often prolonged by a fear of returning to work, and there is sometimes a pronounced tendency to chronic invalidism.

The diagnosis is not easy, and the detection of malingerers may be impossibly hard. The vomiting of alcoholism and of pregnancy, the dyspepsia due to errors in diet or to oral sepsis, may be attributed instead to TNT. The absence of pain at night, the short history of weeks instead of years, the lack of connection between pain and the taking of food enable one to distinguish TNT cases from those of gastric ulcer. Further, neurasthenics do not lose weight, as do genuine TNT cases.

The third form of TNT poisoning is the toxic jaundice that now is regarded as typical, and is the disease dreaded by all in charge of this class of workers. It is as a matter of fact not common. Among the 100,000 men and women known to have come in contact with trinitrotuluol in British factories only 53 are known to have died of toxic jaundice, giving a mortality rate of about 0.05 per cent. The etiology of this variety is obscure. It was early shown that young adults were frequently attacked and had a high death rate; and there is no evidence that alcohol, syphilis, adenoids, obesity, or bad feeding are predisposing causes. Indeed, all the post-mortems seen by Dr. O'Donovan showed, apart from the effects of TNT, a remarkably healthy condition of all the organs.

As already stated, the duration of employment before symptoms develop varies from three days to 17 months. Exceptionally a long latent period may elapse between exposure and development of symptoms. As a rule there are no very pronounced premonitory symptoms. Dr. O'Donovan has histories of 30 cases, 15 of whom had no warning at all. The jaundice appeared without any feeling of ill health; indeed, the patients often resented the idea that they were to be treated as sick people. The 15 who were warned had felt more or less discomfort for about a week, sometimes only for a day. They experienced weariness, with an overpowering desire to sleep in the daytime; dizziness, headache, dyspepsia, with frequent vomiting and pain in the upper abdomen.

Cases that present only jaundice may be diagnosed by the aid of an old laboratory test. A little blood is collected and allowed to clot, and if the serum is vividly yellow it is advisable to remove the person from work with TNT. These jaundiced patients are usually cheerful and active and resent being kept in the hospital; this is in contrast to the gastric cases, who are despondent and miserable.

As a rule patients show a normal temperature. Irregular feverishness, up to 100° or 102° F., is not uncommon. Vomiting is sometimes very obstinate, recurring after every attempt at solid food. Constipation is common, and the stools are white and hard, though natural colored stools may be passed. The pain is referred to the liver region, but tenderness on pressure over the liver is exceptional.

A diminution of liver dullness or even a complete disappearance may be detected in severe cases. Ascites (dropsy of the abdomen) appears to be rare.

The prognosis of toxic jaundice is very uncertain. Youth makes the outlook graver, as does exposure continued after jaundice has developed, but Dr. O'Donovan has seen stuporous or delirious cases recover. Fatal symptoms develop with great suddenness. TNT is not the definitive cause of death, which is rather the result of accumulated autogenous toxins from the degenerated liver.

A fourth form of TNT poisoning is described by Dr. P. N. Panton, severe anemia without jaundice. The type of anemia is usually that known as "aplastic anemia," and the blood changes found are entirely characteristic of this condition, a severe anemia with a high color index, slight morphological changes in the reds, no nucleated reds, and a few macrocytes. An extreme leucopenia is present with relative lymphocytosis. This anemia occurred also together with jaundice in other cases.

The foregoing is a description of the typical forms of TNT poisoning. Unusual symptoms are also described by various of these observers. Thus hemorrhages, either multiple small hemorrhages into the skin or oozing from the mucosa of the stomach or from the throat, are noted. Delirium, sometimes maniacal, is not rare, but tetanic convulsions with marked opisthotonos and a high temperature are described in one unusual case, a young man. Three cases of jaundice seen by one physician developed symptoms of meningitis before death. Another symptom mentioned by only one of these authorities is scanty or suppressed menstruation in women.

Dermatitis is stated to be caused especially by dust and to have no connection with systemic poisoning; jaundiced patients do not suffer from it.

No statistics are given of the numerous cases of toxic gastritis from TNT poisoning, for this form is not a notifiable disease and therefore no records have been collected concerning it. Of toxic jaundice there were 181 cases in 1916, and a certain proportion of these had severe anemia. Stewart had 3 cases of anemia among 14 cases of TNT poisoning, Patten 2 among 19, and Turnbull 3 among 11.

DIAGNOSIS.

Great emphasis is laid on the importance of detecting TNT poisoning in its early stage, for prompt removal from work is imperative and even hospital treatment may be necessary in order to avert toxic jaundice. Dr. Barnes said that he had seen, under conditions over which he had no control, cases of slight conjunctival jaundice develop into severe general jaundice in two to eight weeks if kept in contact with TNT.

Early signs are: Pallor, which is striking, but is not caused by anemia and is probably due to vasomotor spasm; dark-colored urine with urgent micturition; cyanosis, which is seen in about 10 per cent of all employees and which may be unaccompanied by symptoms; blood changes. As regards the cyanosis, it is held by some that this can not be regarded as significant in cold weather, when so many of the workers have blue lips and finger tips. Neither can the signs of TNT poisoning—pallor, cyanosis, and slight icterus—be taken as decisive without a knowledge of the patient's appearance on beginning work, for many of the women applying for work in these plants have already some sclerotic jaundice.

The blood examination promises more help. Bile-colored serum has already been mentioned. Microscopic examination of the blood of 50 TNT workers, women, by Dr. Panton showed that there was no evidence of destruction of reds; no abnormality of color index or hemoglobin; and no such changes as have been found in the course of dinitrobenzene poisoning. The change from the normal was seen in the leucocytes. The 40 women who had been at work for more than a month averaged a leucocytosis of 10,000 per cubic millimeter, the others only 7,500. Many of these women were slightly cyanosed, a few markedly so. He examined then 19 cases of poisoning, 15 of whom were jaundiced, 4 without jaundice. Of those jaundiced, 13 had bile-stained serum; the 2 in whom this was absent were convalescing. Four only showed severe aplastic anemia with extreme diminution of leucocytes and relative lymphocytosis.

The examination of the red corpuscles yields far less that is significant. Except for a small proportion of cases of marked aplastic anemia, the reds number 4,000,000 or over. The most extreme anemia was found in a young girl, where the pernicious type appeared; reds 840,000, hemoglobin 30 per cent, and color index 1.8. There were large numbers of megalocytes in this case, and nucleated reds, but no basophilic granulation. This last point is emphasized by Dr. Stewart as in strong contrast to the findings in nitrobenzene poisoning, where basophilia is looked on as one of the earliest and most trustworthy signs of poisoning.

LATENT CASES.

Certain instances are given to show that in susceptible individuals the changes set up in the organs by TNT are continuous and that removal from exposure to the exciting cause does not result in a clearing up of the symptoms, but the case progresses perhaps even to a fatal ending. For instance, Dr. Barnes found some 20 girls showing slight signs of conjunctival jaundice or cyanosis and had them transferred to a department where they sewed bags and did

not come in contact with TNT. It chanced that about half were set to sew in the hall of an adapted brick house; the other half in a large wooden shed. When 10 days later he examined the girls again he found those who had been put in the brick house in much worse physical condition than before, while the girls in the shed were better, some of them apparently quite free from ill health. The explanation lay in the fact that the first group were working in ill-ventilated and cramped quarters where free movement was impossible, while the second had good air and ample space for moving about. He believes that a change of occupation may actually precipitate the signs of absorption in a worker who has handled TNT in apparently good health for a great many weeks. The ventilation of the new workroom and the restricted amount of physical activity may limit excretion from the skin.

Dr. Barnes mentions striking instances of persons who developed signs of TNT poisoning while on a holiday. One woman who for 12 weeks had filled bags and rammed powder into them went in apparently excellent health to stay in the country. Three days later she developed cyanosis and jaundice, which grew steadily worse, with dyspnea and edema of hands and feet. She was ill for three months. Still more remarkable is a case described by Dr. O'Donovan. A boy of 16 years worked in a melt house from May 23 to the end of June, 1916. He was discharged for threatening to blow the place up. He worked on his father's farm from the end of June to August 28, and during the middle of this period felt sleepy for three days. On August 28 he saw his doctor for vomiting; on September 1 he was jaundiced; and on the 9th he died. Dr. O'Donovan made the post-mortem examination and found a typical condition in the organs: Petechial hemorrhages into serous surfaces and acute yellow atrophy of the liver.

PREVENTION.

These British authorities consider skin absorption as the great danger in TNT shell filling and, therefore, the principles of prevention are based on the prevention of contact between the skin and trinitrotoluene as much as possible. This means cleanliness of floors and workbenches. Every care must be taken to avoid spilling of the powder on the tables, floors, and over the surface of shells that are being filled with TNT. It is very dusty work to get these shells clean if once they have been smeared, and the work is not only economically wasteful, but attended with a higher incidence of poisoning than any other. Dr. Moore advises imposing a fine or other penalty on workers who spill TNT anywhere about the factory.

Ventilation must be abundant, preferably supplied in a continual stream from the ceiling, and drawn out at the floor level. It should

be conditioned so that the moisture does not surpass 67 per cent, as too much moisture increases skin absorption. Dust and fumes should be removed at the point where they are formed.

The importance of personal cleanliness is emphasized by several writers, but details of equipment for this purpose in the various British factories are not given.

Hours of work seem to be long when looked at from the American point of view, but that is because the authorities believe that ample periods of rest must be provided. For instance, Dr. Smith attributes a decided falling off in cases of poisoning in one factory to the institution of the following time schedule: Three and a quarter hours of work, one and a quarter hours of rest; then three and a quarter hours of work and another interval of an hour and a quarter, and, finally, three hours of work, making nine and a half hours of work and two long intervals during which the employees may take a hot meal and walk about in the open air.

PATHOLOGY.

The most valuable part of this publication consists in a number of carefully worked up reports of post-mortem examinations on men and women who died of TNT poisoning, both the toxic jaundice and the aplastic anemia. There are colored illustrations of the typical changes in the liver, and also elaborate charts of the blood changes in a number of cases. Those who wish to go into this phase of the question are referred especially to the papers of Stewart and Turnbull. Briefly abstracted, the pathological changes are as follows: A very great reduction in the size and weight (17 to 36 ounces) of the liver, which is in a condition of yellow and red atrophy. There are projections from the surface of the tissue in which the destructive process is less advanced and here the color is yellow, while the degenerated areas are a smooth, deep red. The lesion is, in fact, the same as that long familiar to physicians as acute yellow atrophy, a process of degeneration and necrosis of the liver cells associated with infiltration and subsequent fibrosis, the left lobe being more affected than the right. The liver cells, which do not contain hemosiderin, show little attempt at compensatory regeneration. The small bile ducts are inflamed, thus causing the jaundice, which is therefore not hemolytic. The kidneys and heart muscle undergo fatty change, and there may be hemorrhages into the serous membranes.

It is considered possible that future research will show that more than one product of TNT may be the cause of the various types of poisoning.

It is considered important, especially with women employees, to see that they have had adequate nourishment before they begin

work in the morning, for many of them take a very scanty breakfast. Therefore British factory managers often furnish free of charge a half pint of hot cocoa or milk the first thing in the morning. In a few instances, a small deduction is made from the women's wages and they are furnished two good meat meals in the works canteen. In one factory such feeding resulted in a reduction of gastric cases from 11.6 per cent in September to 0.7 per cent in January.

There is no evidence to show that women are more susceptible to poisoning than men, but the proof of oversusceptibility on the part of young adults is so strong that it is advisable not to employ anyone under 18 years of age.

The medical supervision of TNT factories is the feature on which most of the prevention of poisoning hinges. Medical inspection of all the workers must be made at short intervals, for the early detection of occupational sickness is the only way in which serious trouble may be avoided. Minor symptoms of sickness must never be treated lightly; they are important industrially, because they cause frequent absences from work and they are important medically because they may develop rapidly into true poisoning. The medical authority should suspend from work or change to other work anyone who shows symptoms that he considers suspicious. Dr. Moore warns him not to think that suspension alone is enough, if absorption of the poison has actually taken place. Before the work is resumed the physician must be sure that no more TNT is being excreted in the urine, or the measure will have been of no benefit.

This alternation of dangerous with safe work, and of temporary suspension from work, is regarded by some British physicians as the most essential part of prevention, for it really means minimizing the dose of poison. Dr. Legge says that in one nitrobenzene factory in England there were 28 cases of poisoning with two deaths at the end of a period of hot weather and overtime work, and that when the hours of contact with the nitrobenzene were reduced to four—the men being employed for the rest of the shift on other processes—the symptoms disappeared. In the TNT factory in Witten, in Germany, four-hour shifts were the rule before the war.

The physicians should insist on early hospital care for cases of jaundice, even when, as often happens, this is resisted by the patient, who insists that he feels prefectly well. Nor must he be allowed to leave the hospital as long as the serum remains bile stained. The danger of returning a man to work after he has once been poisoned is illustrated by a case of Dr. Panton's, where a man who had toxic jaundice recovered, went back to work after three months, and had a recurrence of jaundice, this time with a typical aplastic anemia.

According to Dr. O'Donovan, this is the largest problem of preventive medicine that has yet arisen from any manufacturing process. That preventive measures are successful in coping with the problem is shown by the records of certain British factories, especially those that are nationally operated.

In the list of cases given by Dr. Legge there are two factories that furnished no less than 81 cases out of the total of 181 and 24 of the 52 deaths, the others being distributed among 23 factories. We do not know the numbers employed in these places, but we are told by Dr. Moore that the two factories in question do not employ more persons than several of the others and that any visitor to them can see at once why their rate of poisoning should be so heavy. In contrast to these are a shell-filling works, reported by Dr. Sugden, with 9,000 to 10,000 men and women, and an amatol plant with 2,500, and only one case of toxic jaundice. Fleet Surgeon Munday says that in four admiralty factories with 5,000 workers there has been not only no death from TNT poisoning but no record of any person suffering from constitutional effects of the poison to such an extent as to disable him or her from work.

Munday says that the director general of the naval medical service laid it down that the Admiralty should be a model employer of labor, setting an example to all other employers in safeguarding the lives and health of the employees. No crowded rooms are allowed, no piecework, no closing of windows which should be open, no eating in work rooms, and a strict shop discipline is enforced which makes it possible to insure a high degree of personal cleanliness. There is meticulous care in the removal of fumes at the place of origin, there is a thorough system of alternation of work, medical examination is conducted once a week, and suspension from work can be ordered at the first appearance of symptoms. But the chief point emphasized by Munday is the scrupulous cleanliness of the premises, the absence of dust, of spilling and smearing over floors and benches and over the outside of shells, and the absence of staining on the workers' hands as shown when the gloves are removed for inspection. The employees are warned of the dangers by printed placards and by personal instruction.

Dr. Munday concludes: "If then a marked reduction of the number of deaths and of the incidence of cases in other factories is to be achieved, I submit that this must be accomplished by better discipline and greater cleanliness of workshops and workpeople."

MINOR TNT POISONING.

Dr. Moore emphasizes the importance of the subject under discussion on account of "the large loss of labor at a period of stress in

the country. In several factories concerned in the manipulation of high explosives the degree of absenteeism is very high, and the greatest factor in the production of this is this so-called 'minor' TNT illness. Therefore, from the national standpoint, minor illnesses due to TNT poisoning ought not to be left out of account." Cases of poisoning are not notifiable unless associated with the symptom of jaundice, but it is believed by Dr. Legge that "for every case of toxic jaundice there are at least 30 persons affected in minor degree, necessitating absence from work."

MINERS' CONSUMPTION IN SOUTHWESTERN MISSOURI.

The United States Public Health Service has made an investigation of miners' consumption, based on a study of 433 cases of the disease among zinc miners in southwestern Missouri. In the report[1] just issued it is stated that miners' consumption has been recognized for a number of years as the most important health hazard of the metal-mining industry, and as one probably widespread throughout all mining districts, but until this investigation it had never been the subject of State or Federal inquiry in this country. In this connection attention is directed to investigations in foreign countries, and particular reference is made to the report of the miners' phthisis committee of the Union of South Africa, which was noted in the MONTHLY REVIEW for January, 1917 (pp. 102 to 105). It is explained in the report under review that the zinc ore is found embedded in flint, which lies in horizontal layers or sheets, the mining operations such as drilling, blasting, etc., therefore being carried on in flint, "an exceedingly hard rock with a silica content of over 95 per cent. This flint forms a very fine, hard, sharp, and insoluble dust, which permeates the underground atmosphere to a varying extent, and which, naturally, is extremely irritating to the lungs when inhaled, causing the condition known as miners' consumption." It appears that the chief symptom is dyspnea (on exertion), which becomes aggravated, causing gradually a falling off in the amount of work done; loss of weight is also a constant symptom. This dyspnea is associated with pains in the chest and diminished expansion. "While slaty blue sputum, when present, is diagnostic, yet the physical examination of the patient is in itself insufficient without a knowledge and consideration of the occupation." It is pointed out in passing that miners' consumption may be tuber-

[1] United States. Public Health Service. Miners' Consumption, a study of 433 cases of the disease among zinc miners in southwestern Missouri, by A. J. Lanza, with a chapter on Roentgen-ray findings in miners' consumption, by Dr. Samuel B. Childs. Public Health Bulletin No. 85. Washington, 1917. 40 pp.

culous or nontuberculous, according as tubercle bacilli may or may not be found in the sputum.

In this investigation 720 miners were examined, 433 being affected with miners' consumption, 103 of these also have tubercle bacilli in their sputum. For convenience these 433 are divided into three stages: (1) those characterized by little or no disability, with slight or moderate dyspnea on exertion; (2) those showing noticeable disability with moderate or moderately severe dyspnea; and (3) those showing total, or at least marked, disability with severe or urgent dyspnea. In summarizing the results of the examination of 120 men in the first group, 142 in the second group, and 68 in the third group, all without tuberculous infection, attention is called to the fact that the average number of years worked in sheet ground (hard rock) was more than 5 in each group, and that five years' steady work with exposure to flint dust is very certain to find the miner in at least the first stage of silicosis. It was found that 243 or 56.1 per cent of the 433 men having miners' consumption, and 54 or 52.4 per cent of the 103 men suffering with tuberculous infection, had commenced to work underground before they were 21 years of age.

While hard work at an early age necessarily often undermines the vitality, the percentage under 21 years among the well men would indicate that immaturity has little to do with the incidence of miners' consumption, though contributing to the rapidity with which these cases break down.

Data as to 198 cases of deaths in 130 families out of 480 families visited were obtained, indicating the average age at death as 37 years, the average number of years mining as 13.7, the average number of years in sheet ground (hard rock) as 8.6, and the average number of years of disability before death as 1 year. Adding the last two figures together it is concluded that in the Joplin district the average case of miners' consumption dies within 10 years after beginning exposure to silicious dust.

An examination of 1,120 children of miners and 1,386 children of nonminers to determine the relation of miners' consumption to living conditions and tuberculous infection did not seem to indicate very much tuberculous infection among those in the first group, "yet we can logically expect, unless precautions are taken, that tuberculous infection will become more and more menacing to public health in the Joplin district. This implies increased danger to adults and to children, with tuberculous infection in miners' consumption occurring more frequently in the first and second stages and earlier in the third stage, and, consequently, directly affecting the safety of the children."

This study of 433 cases of miners' consumption in southwestern Missouri led to the following conclusions:

Miners' consumption is an important occupational disease, widely prevalent among the hard-rock miners of the Joplin district, affecting probably 30 to 35 per cent of them.

Miners' consumption is essentially a pneumonoconiosis, due to the inhalation of silicious rock dust, and resulting in a fibrosis, with loss of function.

The disability and other effects of miners' consumption are due primarily to silicosis, infection being usually a secondary, and often, a terminal process.

Infection, both tuberculous and pyogenic, is common in miners' consumption, the tendency to infection increasing as the disease progresses.

The incidence of tubercle infection in miners' consumption is a menace to the public health, affording an unusual opportunity for the spread of tuberculosis.

Aside from the hygienic supervision of working conditions underground, education of the miner against the spread of infection and supervision of miners' children, especially those of consumptive parents, are matters of vital importance.

CARBON MONOXIDE POISONING IN THE STEEL INDUSTRY.

The improvement of conditions affecting the health of persons employed in the metallurgical industries is receiving the cooperative attention of the United States Bureau of Mines and the Public Health Service, and several technical papers have been issued by the former bureau as contributions to the literature dealing with this subject. One of these, entitled Health conservation at steel mills, was noted in the MONTHLY REVIEW for November, 1916 (pp. 641 to 643),[1] and two other papers, touching particularly the steel industry, have recently been issued by the Bureau of Mines under the titles Carbon monoxide poisoning in the steel industry,[2] and Occurrence and mitigation of injurious dusts in steel works.[3]

The object of the paper on carbon monoxide poisoning, as stated in the introduction, is to set forth briefly the liability to this poisoning of those employed in the various departments of the steel plant, the sources of the gas, the extent to which it is present, and its effect on workers, and to make certain recommendations for preventing and remedying such conditions. Attention is given primarily to chronic poisoning—that is, the daily exposure of employees to small quantities of this gas over an extended period of time—rather than to that of acute poisoning, or "gassing," as prevention of this accident is a problem of safety engineering rather than of industrial hygiene.

[1] Another paper entitled Safe practice at blast furnaces, a manual for foremen and men, was noted in the MONTHLY REVIEW for November, 1916, pp. 638 to 640.

[2] United States. Department of the Interior. Bureau of Mines. Technical paper 156. Carbon Monoxide Poisoning in the Steel Industry, by J. A. Watkins. Washington, 1917. 19 pp.

[3] See p. 85 for a review of this pamphlet.

It appears from this paper that carbon monoxide is the most important of the poisonous gases, and as such is a serious hazard, because experience has taught the difficulty of preventing leaks and the serious and rapid results that follow inhalation. Much in the way of reducing this hazard seems to have been accomplished through the safety-first propaganda, but "the use of gases with a relatively large carbon monoxide content and the occurrence of this gas as a by-product of many industrial processes, coincident with a general industrial development, have markedly increased in late years. As a result, while the carbon monoxide hazard is minimized in one process, new and constantly changing conditions arise which present additional hazards of poisoning. In no industry have such changeable conditions been more marked than in the steel industry."

In discussing the cumulative effect on men of carbon monoxide inhaled in small quantities daily and over extended periods of time, it is pointed out that some individuals withstand much larger amounts of the gas than others, and that the bodily mechanism is able to adjust itself for a short time to the abnormal conditions produced by the gas. But it must not be inferred from this that man is immune to this gas, for the report states:

> Carbon monoxide is a gas of such marked toxic effect that, depending on variable factors such as the resistance of the individual and the quantity of gas inhaled, it is only a question of time until the exposed individual is not only incapacitated for duty but may have his health impaired beyond recovery. Another fact of consequence to employers is that carbon monoxide poisoning renders the worker, though still on duty and not incapacitated, below par physically and also in efficiency. His mental alertness and judgment, as well as his muscular strength and coordination, are impaired. While in this condition he is unable to perform his duties in the manner that will be to the best advantage of his employer.

It seems that in steel mills carbon monoxide may be found about blast furnaces, gas washers and scrubbers, gas engines, gas producers, gas boilers, cupola furnaces, dolomite furnaces, "dinky engines" or small locomotives, and "shanties" or rest rooms for employees. While making a sanitary survey of the steel industry in the Pittsburgh district samples of air were obtained to determine the carbon monoxide content in various places in a steel plant. The result showed the presence of this gas in quantities varying from 0.01 per cent, to which the blower-room force was exposed, to 3.4 per cent, to which the engine-room force near the gas engines was exposed. No physical examination of workers was made, but it is stated that data available from experimental work on carbon monoxide poisoning and from observations made in serious or fatal cases of asphyxiation with this gas justify the statement that exposure to 0.2 per cent of carbon monoxide for a period of 30 minutes

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will be sufficient temporarily to incapacitate the person so exposed. "From an industrial hygienist's standpoint the air of any place where men work which contains 0.01 per cent of carbon monoxide is dangerous, and such a condition should be immediately remedied."

As the first step in reducing othe carbon monoxide hazard in steel plants it is suggested that a survey should be made to determine whether the gas is escaping into the atmosphere, and that some system of periodical inspection should be instituted whereby places where gas may escape could be watched and carbon monoxide pollution guarded against. A system of regular air sampling is recommended, followed by an effort to determine the source of the gas, and, if a leak, make the pipe, etc., gas-tight, or if the result of an industrial process change the method of operation or construction. There should be provision for ample ventilation.

Finally, where none of these methods is applicable or, if instituted, fails to prevent the pollution of the air by carbon monoxide, operating conditions should be so altered as not to require men to remain in such hazardous places for more than short periods of time.

DANGERS IN THE MANUFACTURE OF PARIS GREEN AND SCHEELE'S GREEN.

The division of industrial hygiene of the New York State Industrial Commission has recently completed an investigation into the manufacture of paris green. The inquiry was made by Chemical Engineer John H. Vogt and Acting Medical Inspector Lester L. Roos, M. D., and their report, as it appears in the Bulletin of the Industrial Commission for June, 1917 (pp. 181 to 183), is here reproduced:[1]

Paris green * * * is now entirely used as an insecticide for destroying potato bugs and other insects, and on account of the cost of raw material it is little used for any other purpose. Fully 1,000 tons of paris green are annually produced in New York State, and additional precautions are necessary in its manufacture beyond those given in the labor law to guard against cases of industrial poisonings. Considerable illness has been found to exist among many of the workers engaged in this production, due in a measure to lack of knowledge on the part of those engaged in its preparation and disregard for the extreme poisonous qualities which this salt possesses.

Inasmuch as the workers are unacquainted with its dangerous and poisonous properties many cases of arsenical poisoning are not discovered, because as soon as a slight irritation of the skin develops, or nausea occurs, men leave the industry, and so the labor engaged therein is a constantly shifting one.

[1] The final report, modified and revised, has appeared as Special Bulletin No. 83, issued by the New York State Industrial Commission in July, 1917. Albany, 1917. 17 pp. Illustrated.

According to Desamle and Pierron, paris green was first discovered in the year 1712 by Russ and Sattler in Schweinfurt, Bavaria, Germany, from basic-verdigris and arsenic. According to others, Voumitis, of Vienna, Austria, was the first manufacturer. Liebig published the manufacturing process in 1822, and in 1872 its manufacture was undertaken in Brooklyn, N. Y.

The striking bright shade and popularity of this material led to its manufacture by nearly all color makers at that time, which circumstance is the cause of the various names under which it is known besides that of paris green; such names as "Emperor Green," "New Green," "Mineral Green," "Original Green," and "Patent Green," were given to it by the various makers. The object of this, no doubt, was to lead the public to believe that the so-called colors were not of a poisonous nature.

These colors, or tints, were produced by mixing paris green with barytes, chromate of lead, china clay, and other white mixtures, thus lowering the cost of manufacture. "Scheele's Green" is the name given to the commercial product used as an insecticide, which is manufactured in one establishment in the State. The original method of its manufacture was kept a strict secret.

In an attempt to manufacture paris green it was discovered by C. W. Scheele in 1742, a native German chemist who resided in Sweden, that a substance could be produced which greatly resembled paris green and manufactured at less cost. To this substance the name "Scheele's Green" was applied, by which it is still known.

Paris green and Scheele's green are manufactured by 10 firms in the United States, of which 7 firms are located in the State of New York, only 6 of which were actually making the materials when the investigation was conducted. Five of the firms were located in the borough of Brooklyn, city of New York, and one at Beacon, N. Y., the latter confining its product to Scheele's green and kalsomines. All of the factories engaged in the production of these substances manufactured other compounds, such as dry colors, paints, crayons, bleaching solutions, dyes, and other chemicals, no factory being entirely devoted to the exclusive production of these articles. The amount manufactured varies with the demand. The largest factories turn out about 200 tons each during their season, which is principally a period of about six months during the fall and winter months.

The process of paris green, also known as "Schweinfurter Green," "Meadow Green," "Parrott Green," and "English Green" is a cupric aceto arsenite, having the formula $CU(C_2H_2O_2)_2.3CUAs_2O_4$, is an exceedingly poisonous double salt insoluble in water; in contact with organic matter it changes somewhat. Many micro-organisms and fungi act upon the compound and produce arseniuretted hydrogen, which, no doubt, causes the arsenical ulcers met with by workers engaged in preparing the material. The gas evolved being soluble in water readily attacks the skin, also the eyes, nose, throat, and lungs, being more susceptible to its action than the simple mechanical action of the pigment. The fine powder attacks the skin, but its most intense effect is found in those regions of the body where perspiration is present at most times.

Scheele's green, known as "Arsenite of Copper," also "Hydro Cupric Arsenite," "Mineral Green," and "Swedish Green," is composed of acid arsenite of copper and is represented by the formula $CuHAsO_3$. It has a strikingly fine light green color, formerly used in calico printing, and as a pigment for green wall paper. It is insoluble in water, but dissolves in excess of alkalies or acids. It is very poisonous and like paris green capable of producing severe ulcers on the skin, severe irritation of the mucous membranes of the eyes, nose, throat, and gastro intestinal irritation. Its use is principally as an insecticide.

Chronic arsenical poisoning is a condition to which most of the men are exposed; acute pains in the abdomen, and nausea and intense thirst are first noticed. This is followed later by gastritis, enteritis, jaundice, and diarrhæ, followed by constipation. Nails drop off, large ulcers develop, and the skin appears somewhat mummified. In intense cases, death sometimes results.

Paris green is manufactured by dissolving in wooden tubs a quantity of sulphate of copper in hot or cold water, adding to it acetic acid, heating the solution to form cupric acetate. In another tub arsenious acid is dissolved in a boiling solution of sodium carbonate, which usually takes about an hour to carry out, the proportions added in such an amount as to obtain arsenite of soda. These tanks are usually hooded to carry away the vapors formed, outside of the factory. This solution is added to the cupric acetate solution and stirred while hot. Mechanical means are used in some cases, while the old style hand method is principally practiced. An olive-green precipitate of cupric aceto arsenite results. Should a yellow-green precipitate be produced in the course of boiling, a little acetic acid is added, the solution is boiled a little longer and the liquid allowed to settle. The water solution is run off and the precipitate washed with several changes of water. (This last step is not practiced by some firms.) The resultant precipitate is shoveled out on filters and allowed to drain; when the draining is finished, it is again shoveled on drying trays. These are placed in a drying room or drying closet, and when dried dumped into chutes or hoppers which convey it to crushing rolls; then it is sifted, transferred to the bolter, and finally filled into kegs, barrels, or cans, either by hand filling with a shovel or scoop, from a hose-spout from the bolter, and in the case of small cans in one factory by means of an automatic weighing machine.

Scheele's green is manufactured by adding to a solution of sulphate of copper, a solution of arsenite of soda as long as the green precipitate forms, washed with water and the water solution drained off. The material is shoveled from the vat onto drying trays, placed in a wooden dryer and, when dry, placed into a bin and shoveled out into a tumbler with other ingredients to make the patent insecticide, in which but 1 per cent of the pigment is an active part. The manufacture of this substance is practiced in but one factory. The packing is performed in a separate room by an obsolete method of scooping up from the large receptacles into the smaller boxes. The room in which this work is performed is not provided with any means of mechanical ventilation.

The method of production in each factory varies somewhat in handling. For instance, one factory does not wash the finished precipitate of paris green, while another performs this task; drying is done in one factory in a large room which takes more than three to four days, while in another it is done in 24 hours. Employees are obliged to enter the dry room, which often has a temperature of 140° F., to carry in and out the trays containing the product; another has separate drying ovens, each arranged with a damper so that the flow of hot air can be stopped which circulates through the oven, thus preventing the heat and dust being blown into the workroom.

The dumping of the trays, containing material, into the chute leading to a bolter is done in one factory without a hood inclosure to occlude the fine paris green dust, while in another it is placed on the tumbler, which is turned upside down and surrounded by a hood or a closet, to which is attached a pipe with an exhaust, which has a static suction of one-half inch; while another has no pipe but a sliding door in the inclosure, which is closed by the operator before turning over the trays to be dumped. Paris green, in the last case sifts out of the door when it is opened for the next tray, and workmen usually inhale a considerable amount of the dust.

Filling boxes by hand is resorted to in most all the factories. The material is scooped out of the receptacles or barrels with small shovels. Barrel filling is performed directly from the tumbler through a hose connection, reliefs being provided from the barrel by a small pipe back to the tumbler, in which the dust and air contained within the barrel is led back, thus preventing same from entering the workroom; some of the firms do not take this precaution. Mechanical weighing and filling of one and two pound boxes are performed in one factory with good results. The machine, made by an automatic weighing machine company, has attached to it exhaust pipes, so placed to remove the greater part of the dust generated.

Label pasting is done under small hoods in one factory, but in all others no hoods are provided.

It appears to be the prevailing opinion that the fine dust of paris green can not be controlled and that it will continue to be liberated at all points. Another important factor is the lack of knowledge possessed by the workers of its poisonous properties.

It is useless to provide a well-equipped room in which employees may take their meals, if the material is tracked into the room on shoes of workmen and the floor seldom cleaned.

In some factories single lockers are provided for employees, old clothing and street clothing are hung together in these, and dust from the working clothes is shaken into the street clothes.

If walls, though whitewashed in accordance to law, are allowed to contain paris green powder, if a disregard is shown in placing trays containing paris green and Scheele's green near windows through which a draft blows, whereby material is scattered to all parts of the factory, if respirators are provided by the firms which are allowed to get dirty and the meshes clogged with the paris green powder, or if the underclothes which the men wear are dried in rooms with paris green, such methods as these show the necessity of stringent education methods with the workmen and proprietors which will greatly reduce the number of cases of arsenical poisoning.

Factory No. 1.—The manufacture of paris green in this establishment is conducted entirely in the basement of a six-story fireproof building. It is well ventilated by natural means, windows being located on two sides of the factory. The floors are kept in a fairly good condition. The men are provided with a linen headpiece and face piece, together with cotton waste and overalls, which are made to tie at the wrist and ankles. All men use gloves and high shoes, which they provide themselves. No hot water, soap, nor towels were furnished.

In the method of drying this factory obviates the necessity of men entering the dry room by the use of the American blower system. The drying racks are placed on cars and pushed into a tunnel, which is heated by surplus steam from the boilers. As each car is brought in it moves the other ahead, and at the end of seven days the first car reaches the end of the tunnel where it is placed on a transfer car and prepared for bolting.

The bolting, sifting, and packing are carried on in the same room; the floors, walls, and ceiling of the room were thickly covered with paris green. An exhaust system located under the packing table disposed only of small quantities of the dust. Within the bolting room there is an engine with a swiftly running belt. This belt serves to keep large quantities of paris green dust in constant motion.

To place the dry pigment in the tumbler, the worker is required to mount six steps of a movable platform carrying the tray above his head and then throwing it into the dumper. This operation is also accompanied by large quantities of

dust entering the atmosphere. In barreling and package filling much dust is also created.

Ten men were employed, of which seven were examined:

S. P., 24 years of age, engaged for three years in the industry, showed a marked conjunctivitis.

S. C., 27 years old, engaged in the industry for three years, showed a conjunctivitis and scars of ulcers on legs and hands.

J. D., 29 years of age, negative.

W. S., 24 years old, one month in the industry; this man showed a large, nasty-looking ulcer, located on the right side of the lip and extending into the nasal cavity. The septum was involved, and this will probably cause a perforation.

F. B., 24 years old, four years in the industry; negative.

M. O., 50 years old, one month in the industry, shows a slight nasal irritation.

E. W., 41 years old, five years in the industry, shows a marked conjunctivitis and slight anemia.

Factory No. 2.—This factory is a four-story nonfireproof building, devoted almost entirely to the manufacture of paris green. It is ventilated by doors and windows. In this plant little can be said in favor of the conditions toward guarding the health of the employees. The floors, walls, ceiling, stairs, and halls of the building are covered with deep layers of paris green dust. Each footstep raised a quantity of dust from either the floor or the stair tread. In the vat room and package-filling room, owing to poor drainage, paris green in connection with water formed a pasty mass covering the greater part of the floor.

The pigment in pulp form is taken in barrels from the tank room on the ground to the fourth floor and then placed in the drying room. The worker must pass through the drying room each time he goes to the tumbler, and while batches are being tumbled the door between the dry room and the tumbling room is always open. The drying tray is dumped in and large quantities of dust result. In this plant the bolting is carried out in the same room as the tumbling, and while the bolter is in motion large clouds of dust are produced completely enveloping the worker at the tumbling machine.

Men were found eating in a small wash room which had no window and which was in a very dirty condition. These men, who were not provided with any headpieces, overalls, masks, hot water, soap, or towels, had no realization of the dangerous material handled or its means of entry into the body.

Barrel and package filling also gave rise to large quantities of dust; women were engaged in labeling and no protective clothing was provided for them. Fifteen men and two women were employed in this factory and seven were examined:

K. S., age (?), employed 25 years, showed a marked anemia due to arsenic.

M. C., (?) employed two months; negative.

Wm. L., 36 years old, employed about six weeks, has attack of furunculosis due to paris green.

J. W., 30 years, employed four months; negative.

O. C., 22 years old, employed two weeks, has had an attack of furunculosis on arm and ulcers on fingers.

E. G., 26 years old, employed two months, shows scars of ulcerations on the arms.

J. S., age (?), employed nineteen years, has recurrent attacks of furunculosis.

In these plants for all conditions which were found to be detrimental to health and whereby the law could be applied orders were issued. These orders related

to the prohibition of eating within the factory; cleanliness of floors, walls, and ceilings; providing running hot water, soap, and individual towels; installing exhaust systems to dispose of the dust created in the process of manufacture; suitable place in which to eat meals; and suitable means to remove dust from the floors.

Analytical determinations.—A chemical analysis was made of air of one of the packing rooms, where filling of boxes from barrels was performed; 305 milligrams of the paris green were found per cubic meter of air at 60° F. This material in the air was generated in the process of hand filling, blown off the walls and ceiling, and stirred up from the floor in the act of walking. A proper method of weighing and filling under inclosed hoods, clean walls, and floors would have eliminated this large amount of dust.

Samples of underclothing were analyzed and found to contain 1.1 milligrams of paris green in a piece measuring six square inches.

Printed notices furnished by the Department of Labor of the State Industrial Commission, to read as follows, should be posted in every room where paris green is handled:

"Paris green is a dangerous poison and sickness results from the breathing of air containing it, through broken skin, and through the mouth.

"Don't hang any clothes to be dried in the dry room.

"Don't leave the factory in the clothes in which you work.

"Don't place your factory clothes in the same locker with street clothes, when provided for you.

"Don't eat in or about the factory, only in provided lunch room.

"Don't eat before you have washed your face and hands with hot water and soap.

"Don't scratch or touch any part of your body before you have washed your hands.

"Don't sweep the floor with a broom.

"Don't plug your nose with cotton; tie clean cotton waste over nose and mouth.

"Keep your gloves clean on the inside.

"Take a complete wash at home daily.

"Drink milk instead of beer or whiskey.

"Tie clean cotton waste, twice daily, over nose and mouth, as this is the easiest and best respirator.

"Try and keep down dust as much as possible by closing doors carefully and keeping the dust off the floor as much as possible.

"Keep your hair, mustache, and finger nails short, to prevent the paris green from settling in them."

Recommendations to employer.—Provide double lockers for men engaged in paris green manufacture.

Sweep all floors and keep ceiling and walls of workroom, halls, stairs, and lunch room free from paris green dust by using a vacuum sweeper.

Provide periodical medical examinations for men engaged in the production of paris green and Scheele's green.

Provide overalls, head and neck pieces of unbleached muslin, and gloves for paris green workers, and have same washed weekly.

Provide clean cotton waste as respirators for all paris green workers.

Not less than one hour should be permitted for the noonday meal.

It is suggested to the State industrial commission that the recommendations which are made and are not covered by law be enacted into a code in order that this industry be freed from the many dangerous conditions which now surround it.

DANGERS OF THE AIRPLANE INDUSTRY FROM A HYGIENIC STANDPOINT.

The report of an inquiry recently made under the direction of the New York State Industrial Commission into the dangers of the airplane industry from a hygienic standpoint, is summarized in the June, 1917, bulletin of the Industrial Commission (pp. 185 to 189). This report is based on studies made in eight factories in New York State, whose products are airplanes and hydroplanes, in three of which some thought appears to have been given to insure safety and to protect the health of the men engaged in the dangerous processes connected with the manufacture of these articles. "In the other five factories no attention has been paid to these safety details, and it became evident that these conditions must be remedied at the earliest possible moment."

Attention has been called in the MONTHLY REVIEW to the danger point connected with this industry,[1] namely, the "doping" of airplane and hydroplane wings, ailerons, rudders, and fuselage. This "dope" contains chiefly as its base either acetate or nitrate of cellulose mixed with a solvent which, when applied, quickly evaporates and leaves the base of acetate or nitrate of cellulose firmly fixed within the interstices of the linen. In the early days of the industry tetrachlorethane was supposed to be the one solvent which rendered the linen most taut. A chemical analysis was made of the various "dopes" used in the New York factories to determine the solvents employed, and it was found that each of seven samples contained one or more of the following solvents: Tetrachlorethane, alcohol, acetone, benzol, acetic acid, amyl acetate, and fusel oil. It is the usual custom, according to this report, for seven coats of the "dope varnish" to be applied, the first five coats being acetate of cellulose "dope," while the last two are of a nitrate "dope." From 30 to 45 minutes are allowed between each coat. The parts doped are then placed on racks and allowed to dry in close proximity to the workers. Since speed in manufacture is now an important consideration, the drying of the varnish is hastened by keeping the "dope" rooms at a much higher temperature than other parts of the factory, thus intensifying the discomfort of the employees.

The report recites the conditions found in each factory, noting specific cases of employees affected by the poison, and submits the following recommendations:

1. In aeroplane factories where "dope" is used a downward system of ventilation should be furnished; intakes to be located at floor level, which should be situated about 6 feet apart beneath working areas.

[1] See MONTHLY REVIEW for June, 1916, p. 86; November, 1916, pp. 649–652; January, 1917, pp. 97 and 98.

2. Drying of wings, ailerons, and rudders to be done in a room separate and apart from the "dope" room.

3. When fuselage is "doped" it should be done in proximity to a downward system of ventilation.

4. Each morning and afternoon should be interrupted by a 15-minute rest period, men to go into the open air during such times.

5. Hot running water, soap, and individual towels, also overalls, should be provided for all "dope" workers.

6. Lockers, which shall be well ventilated, should be provided for all "dope" workers.

7. No eating should be permitted in any "dope" room.

8. Not less than one hour shall be allowed as a lunch period to any worker engaged in the process of "doping."

9. Active medical supervision, as an early diagnosis of "dope" poisoning prevents serious after effects.

10. No "doping" should be conducted in the open air unless the same is done under a shed so as to prevent rapid evaporation of the poisonous fumes.

11. Any workers, who complain of dizziness or sleepiness, should be immediately removed from the work for 48 hours.

INJURIOUS DUSTS IN STEEL WORKS.[1]

In a pamphlet on "Occurrence and mitigation of injurious dusts in steel works," issued by the United States Bureau of Mines, the author makes the statement that from the standpoint of the industrial hygienist no health hazard to which those employed in modern industries are exposed is of greater importance than that of a dust-laden atmosphere. This dust may act injuriously, it is stated, in three different ways, depending on the character of the dust particles: (1) by irritant action, (2) by toxic action, and (3) by mechanical action. Sometimes the dust may act in two or more of these ways simultaneously. The paper notes briefly the different places in a steel plant where dusts of various kinds may be encountered, and gives the result of air sampling at working places in order to determine the extent to which the dusts were suspended in the atmosphere. The largest quantity of dust per 100 liters (3.53 cu. ft.) of air was found in ore bins, ranging from 3.04 milligrams to 44.2 milligrams (0.05 to 0.68 grain), and in dolomite sheds, ranging from 5.5 milligrams to 33.4 milligrams (0.08 to 0.52 grain).

How the dust may be abated in the various departments of a steel plant is suggested in some detail, but the general statement is made that the dust hazard may be mitigated by preventing dust suspension, by removing suspended dust from the air, and by providing against the inhalation of dust. To prevent suspension it may be necessary

[1] United States. Department of the Interior. Bureau of Mines. Technical Paper 153, Occurrence and mitigation of injurious dusts in steel works, by J. A. Watkins. Washington, 1917. 20 pp.

to alter the usual procedure of the manufacturing processes or to change machinery or equipment in order to obtain satisfactory results. In some cases sprinkling with water may prove effective. To remove suspended dust from the air, an efficient system of exhaust and of supplying air is recommended. The prevention of inhalation of dust may be secured by requiring the employees to wear respirators or by altering their duties and places of work.

GLASSES FOR PROTECTING THE EYES FROM INJURIOUS RADIATIONS.[1]

Owing to the incidence of eye injuries in some manufacturing processes, particularly those involving prolonged exposure to intense heat from furnaces containing molten metal, glass, etc., considerable attention is being given to determining the best means for protecting the eyes from these radiations. To this end the United States Bureau of Standards has recently issued a pamphlet[2] intended to meet the demand for general information concerning the protective properties of spectacle glasses, particularly glasses which shield the eyes from infra-red or so-called heat rays. While no definite proof of the injurious effect of infra-red rays from incandescent bodies, such as molten metal, is available, there appears to be a general feeling that the eye becomes fatigued, if not permanently injured, under conditions which expose the worker to these heat rays. The fact is noted that no artificial source of light used for illuminating purposes contains enough ultra-violet radiation to be injurious to the eye, under practical working conditions, while the infra-red rays have no specific action distinct from thermal effect, but that in view of the fact that the infra-red rays are in far greater abundance than the ultra-violet, the inference is that glassworker's cataract is to be ascribed to the heat rays rather than to the ultra-violet rays. It is noted that exposure to excess of ultra-violet light is injurious, causing conjunctivitis.

Tests have been made to show that most of the energy (97 per cent) radiated from a furnace at 1,000° to 1,200° C. (1,832° to 2,192° F.) is absorbed in the outer portion of the eye and that injuries caused by infra-red rays therefore must occur in that portion, while, on the

[1] An annotated list of references to books and periodicals on eye injuries and diseases, with special reference to eyestrain, appears on pages 186 to 191 of this issue of the MONTHLY REVIEW.

[2] United States. Department of Commerce. Bureau of Standards. Technological paper, No. 93. Glasses for protecting the eyes from injurious radiations, by W. W. Coblentz, associate physicist, and W. B. Emerson, laboratory assistant. Washington, May 5, 1917. 14 pp.

other hand, the eye is quite transparent to ultra-violet rays, some wave lengths of which can reach the retina.

Moreover, the physiological effect seems to be different. The infra-red rays appear to produce a thermal effect ("burns"), while the ultra-violet rays (although of a much lower energy value) seem to attack the tissue in a different manner, i. e., their effect is actinic.

To meet these conditions, it is stated, numerous glasses have been produced which differ from the ordinary white crown glass used in spectacles in having a high absorption (1) of the violet, (2) of the infra-red, or (3) of both the violet and infra-red. These glasses differ in the amount and color of the light transmitted.

Glasses having a gray or neutral tint are the most agreeable to wear, as they do not alter the color of objects. Hence, for outdoor wear ordinary black glasses, which can be obtained for a few cents, are quite as good as the expensive glasses which one frequently sees advertised.

The report discusses the protective properties of various glasses, with particular reference to their absorption of the infra-red, and tabulates a summary of the most important glasses investigated showing the maximum transmission in the visible spectrum and the per cent transmitted of the total radiation from a furnace heated to 1,000° to 1,100° C. (1,832° to 2,012° F.). The data collected from these investigations, representing an extensive group of glasses available for protecting the eye from the ultra-violet, the visible, and the infra-red rays, led to the following conclusions:

For protecting the eye from ultra-violet light, black, amber, green, greenish-yellow, and red glasses are efficient. Spectacles made of white crown glass afford some protection from the extreme ultra-violet rays which come from mercury-in-quartz lamps and from electric arcs between iron, copper, or carbon. The vapors from these arcs emit but little infra-red radiation in comparison with the amount emitted in the visible and in the ultra-violet.

For shielding the eye from infra-red rays deep black, yellowish-green, sage-green, gold-plated, and bluish-green glasses are the most serviceable. For working near furnaces of molten iron or glass if considerable light is needed a light bluish-green or sage-green glass is efficient in obstructing the infra-red rays. For working molten quartz, operating oxyacetylene or electric welding apparatus, searchlights, or other intense sources of light, it is important to wear the darkest glasses one can use, whether black, green (including gold-plated glasses), or yellowish-green, in order to obstruct not only the infra-red but also the visible and the ultra-violet rays.

Data are given showing that of the infra-red rays emitted by a furnace heated to 1,000° to 1,100° C. (1,832° to 2,012° F.) (1) about 99 per cent are obstructed by gold-plated glasses, (2) about 95 per cent by sage-green or bluish-green glasses, (3) about 60 to 80 per cent by very deep black glasses, and (4) about 60 per cent by greenish-yellow glasses.

At higher temperatures these data would be somewhat different, but not sufficiently so to modify the rough estimates dealt with in this paper,

ORGANIZING AND CONDUCTING SAFETY WORK IN MINES.

Considerable progress has in recent years been made in organizing and conducting safety work in mines, this result being achieved by the efforts of mining companies which have been quick to adopt the many desirable safety measures, such as the creating of safety departments and the requiring of more careful supervision at the mines; by the passage of improved mining laws and their strict enforcement; by the formation of various local and national organizations for promoting safety and standardizing methods; by the enactment in many States of workmen's compensation legislation with the consequent insurance against casualties; and by the carrying on of extended educational work among the miners themselves. Accident prevention has not only meant fewer injuries and consequently less suffering and distress to miners and their families, but has increased the efficiency of plant operation so that economic gain has followed.

The work of making the mining operations safer and of showing companies and their employees how to organize to prevent accidents, many of which are due to carelessness and are, therefore, avoidable, has been primarily a function of the United States Bureau of Mines, which, in a recent publication entitled "Organizing and conducting safety work in mines," [1] calls attention to some of the means adopted for promoting greater safety in and around mines and points out how the organization of safety work, which is the fundamental requirement for an effective campaign in accident prevention, may be consummated.

It is recognized that preventable mine accidents are generally attributable to carelessness, insufficient inspection, inexperience, unsafe practices, lack of safeguards, violation of instructions, indifference, defective equipment, use of intoxicants, insufficient lighting, poor judgment, and other indirect causes, and the safety-first movement aims at minimizing such preventable accidents. It is stated that in some of the leading industries safety campaigns have resulted in reducing by 30 per cent and even 70 per cent the number of accidents that had been occurring annually for a period of years.

The bulletin under review suggests that experience has proved that satisfactory conduct of a safety campaign requires organization for carrying out three branches of work, as follows:

1. An organization that provides an enthusiastic and hard-working safety committee or department, an adequate inspection system, and hearty cooperation of officials and employees.

[1] United States. Department of the Interior. Bureau of Mines. Organizing and conducting safety work in mines, by Herbert M. Wilson and James R. Fleming. Technical Paper 103. Washington, 1917. 57 pp.

2. A system of education that will assist all employees to follow more carefully the safe and proper methods of work, and will keep them constantly alert to the need of caution.

3. A scheme of safety measures designed to eliminate, as far as possible, dangerous conditions that have caused accidents or may cause them.

The inspirational force in a safety campaign, according to the authors, must be the president or owner, and should then, passing down through the general manager, superintendent, foreman, and subordinates, find expression through the medium of rigid inspection, the installation of safety appliances, safety committees, the posting of notices and warnings, provision for the care of injured, and such educational means as lectures, rallies, and miners' field meets. If the company is large and operates several mines, there should be a safety department in charge of a safety inspector or engineer who should devote his entire time to safety work. In smaller concerns the safety work may be more closely associated with the operating department. As a part of this organization the authors suggest provision for some or all of the following committees, depending on the size and number of various operations controlled by each company:

1. A central safety committee, composed of the general manager, general superintendent, chief engineer, inspector, secretary, or other officials, which should hold monthly meetings. Reports and recommendations of the inspector and of subcommittees should be received and if practical put into effect, the causes of accidents studied and classified, and steps taken to avoid the recurrence of similar accidents. Regular trips of inspection should be made and greater impetus given the movement by frequent public meetings in the interest of safety. Due publicity will thereby be given in addition to the constant evidence afforded by the work as it progresses.

2. A plant safety committee composed of the superintendent, assistant superintendent, mine foreman, captains [metal mining term for underground foremen], fire bosses, electrical engineer, mechanical engineer, mining engineer, and chief clerk. In the smaller operations this committee might be substituted for the central safety committee and perform the functions outlined above; in this event the inspector would be a member ex officio. Reports should be submitted to the executive head, usually the general superintendent. The members of this committee would be the active agents in carrying out the provisions of the law and such measures as may be adopted for promoting safety. This committee should hold regular monthly meetings for the consideration and discussion of all safety problems and submit monthly a detailed written report stating the progress made, with recommendations. These reports would give the judgment and recommendations of men who have had the most intimate experience with all the various divisions of underground work and would tend to standardize underground practice as a whole. It is extremely important that the foremen become actively interested, as it is the foremen who must enforce the rules finally adopted, and service in the committee best acquaints them with the reasons for these rules.

3. At each mine a mine safety committee should be organized consisting of men doing different kinds of work and usually of different nationalities. This committee would make regular monthly inspections and submit written reports, with recommendations, directly to the central safety committee or the executive.

The committee should consist of three members appointed by the superintendent or the foreman or elected by the miners as conditions may indicate will prove most satisfactory and effective. Each member should serve two to four months and be succeeded by a new member, so that in time a large number of men of various nationalities would have been in a position where they would feel individual responsibility and could more readily understand the need of cooperation. All members of this committee should be furnished with a safety button specially designed for each company, the ex-members retaining theirs in honorary membership. Inspection trips of such workmen's committees tend greatly to interest the men. Better cooperation is insured and habits of indifference and carelessness are discouraged. For all time spent in this work, the members of the committee should receive their regular pay. Mixed committees of workmen and foremen and other officials have been appointed at some mines. Such committees, acting as plant committees, have the advantage of bringing the management and men together in work for greater safety, and induce a comparison of viewpoints.

An essential element in promoting safety in mines is the cooperation of the men themselves, which may be secured by recognizing and rewarding individual effort toward accident prevention. Many companies, it appears, are encouraging the safety movement by paying their foremen and assistant foremen a cash bonus each month for good records in preventing accidents during any one working month and an additional bonus for a record entirely free for a period of six months or more. One large company, it is stated, has maintained a bonus system for $4\frac{1}{2}$ years at a cost of 15 cents per ton of coal produced.

But it is believed that the safety movement may be promoted best through the education of the miners so that they may know clearly how to do their daily work with greater personal safety. Much of the publication under review is devoted to showing how the men may be led to realize and guard against the dangers of their work, with illustrations of various means adopted by different companies for encouraging care on the part of workmen. These include personal instruction in safe practices, instruction in English, the posting of rules, distribution of handbooks containing rules, and the use of bulletin boards and suggestion boxes. The development of safety measures to reduce the probability of accidents is given consideration. These include mechanical safeguards, signs, and other general precautions, and the points brought out are made more graphic by numerous illustrations.

HEALTH AND WELFARE OF MUNITION WORKERS OUTSIDE THE FACTORY.

Housing, transit, and recreation are the three factors most vitally affecting the health and welfare of munition workers outside the factory,[1] according to Memorandum No. 17 recently issued by the British Health of Munition Workers Committee.[2] This study was made because "the necessity in the present emergency of transferring workers from their homes to distant places where their labor is required has created an unparalleled situation, and problems of the first importance to the nation are arising simultaneously in munition areas in various parts of the kingdom, especially as regards women and girls." While it is recognized that local agencies and volunteer societies, through the provision of hostels and clubs, are performing a useful work in this respect, the committee believes that such efforts must now be supplemented and reinforced by State action. The position is thus briefly stated:

> By the agency of the State women and girls are being exported from their homes and imported into munition areas.
>
> By the agency of the State the liberty of the individual to throw up her work and to take her labor elsewhere is restricted.
>
> On the State, therefore, the responsibility lies not only for suitably housing these transplanted workers, but also for securing the safeguards needful for their health and morals, the maintenance of which is essential to the nation.

The problems presented for solution are grouped as personal questions, housing accommodation and transit, sickness, and leisure. Taking up the first group, the committee expresses the opinion that only normally healthy, clean, and wholesome-minded women and girls should be exported, involving necessarily the medical examination of those who leave home for work; and that mothers of infants or of families of young children should not be exported. Those sent to munition centers for work, especially if the distance is great, should be seen off and met at the station, and warned to provide themselves with sufficient clothing and with money to tide them over until the first week's pay is paid, which may not be for 10 days or 2 weeks. When the need is proved, the committee recommends that financial help should be forthcoming from a fund administered locally, safeguards being taken for the repayment of the loan from wages.

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[1] The committee has previously dealt with the health and welfare of these workers inside the factory in three memoranda: Memorandum No. 2, Welfare supervision, noted in the MONTHLY REVIEW for May, 1916 (pp. 68, 69), and reprinted in the bureau's Bulletin 222; Memorandum No. 4, Employment of women, in the MONTHLY REVIEW for June, 1916 (pp. 74–76), and reprinted in Bulletin 223; and Memorandum No. 5, Hours of labor, in the MONTHLY REVIEW for June, 1916 (pp. 77–79), and reprinted in Bulletin 221.

[2] Great Britain. Ministry of Munitions. Health of Munition Workers Committee. Memorandum No. 17. Health and welfare of munition workers outside the factory. London, 1917. 9 pp. This memorandum is reprinted in full in the bureau's Bulletin 230.

When the workers arrive at the place of employment, the matter of housing accommodations and transit to and from work becomes important, and the committee suggests that a reception or clearing house, in charge of an experienced superintendent, should be provided where the women may stay for a night or two until suitable lodgings are found for them. These places should be clean and attractive, with appetizing food and adequate comfort accommodations. As to the hostels, the committee suggests that as much freedom as is compatible with good order should be allowed, and the need for rest and the companionship of a few friends should be met by a sufficient number of small sitting rooms. To obtain suitable and safe lodging places, local advisory committees or other agencies should gather information as to the character of such places and make a list of those approved, the agreements as to terms being made, not between the lodger and the landlady, but between the responsible local organization and the landlady, thus protecting the latter. The matter of transit to and from work should receive careful attention, because "health, timekeeping, temper, and output all suffer when to the day's work is added the discomfort and fatigue of a long walk to and fro in bad weather or in darkness, or a scramble to squeeze into a crowded railway carriage, tram, or omnibus, with a long journey in a bad atmosphere."

The following recommendations are made by the committee touching the matter of sickness and leisure:

Sickness.—1. Arrangements for the notification of illness in lodgings should be made and enforced. A special sick-room hostel or cottage hospital may be required.

2. A special committee of women (preferably married women and medical women) should be formed to keep in touch with maternity cases. A hostel, under the auspices of a philanthropic society, may be needed to provide for those who can no longer be suitably employed at the factory, and who can not return home. Arrangements for the confinement of inmates would be necessary.

Leisure.—1. Organized means of recreation and of wholesome employment of leisure should be provided.

2. For the preservation of order and for preventive work, women police should be appointed, assisted where desirable by women voluntary patrols.

3. Questions regarding the sale of drink should be referred to the central control board (liquor traffic) for action.

SOCIAL INSURANCE BY THE UNITED STATES GOVERNMENT.

Since September 2, 1914, the Federal Government through the Bureau of War Risk Insurance in the Treasury Department has been writing insurance on American vessels engaged in foreign trade, with their cargoes. This form of social insurance covering risks to property has been remarkably successful. If the Federal Government

had not assumed these war risks, the marine insurance rates charged by the private companies would have been much more deadly to our overseas trade than the German sea raiders and submarines. From September 2, 1914, to December 31, 1916, the War Risk Insurance Bureau wrote 1,791 policies, amounting to $182,203,080, for which premiums aggregating $3,244,785.04 were collected. The net losses for this period were $774,868.73. From January 1, 1917, to June 30, 1917, the bureau wrote 4,527 policies for $441,761,518 with premiums amounting to $11,963,945.33. The net losses from September 2, 1914, to June 30, 1917, amounted to $10,176,435.36.

This experiment with social insurance covering property losses is most interesting and instructive. The success in this venture no doubt suggested an extension of social insurance to cover seamen who are exposed to the extraordinary risks of operating the insured vessels carrying insured cargoes through seas strewn with mines and infested with commerce destroyers above and below the water. If ships and cargoes can be insured successfully by government, the lives and limbs of seamen can likewise be insured. In fact, it would seem to be much more imperative to insure at reasonable rates the seamen than the ships and cargoes exposed to these frightful war risks. Private insurance companies were both unwilling and unable to hazard writing insurance for these men engaged in this extrahazardous industry, the risks of which could not be foretold. The only way cargoes could be kept moving was to provide adequate protection to the dependents of these men. To meet this need the United States Congress passed an amendment to the War Risk Insurance Act, which was approved by the President June 12, 1917. The amended act is given herewith.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That the first section of the act entitled, "An act to authorize the establishment of a Bureau of War Risk Insurance in the Treasury Department," approved September second, nineteen hundred and fourteen, is hereby amended to read as follows:

"That there is established in the Treasury Department a bureau to be known as the Bureau of War Risk Insurance, the director of which shall be entitled to a salary at the rate of $5,000 per annum."

SEC. 2. That section two of such act is hereby amended to read as follows:

"Sec. 2. That the said Bureau of War Risk Insurance, subject to the general direction of the Secretary of the Treasury, shall, as soon as practicable, make provisions for the insurance by the United States of American vessels, their freight and passage moneys, cargoes shipped or to be shipped therein, and personal effects of the masters, officers, and crews thereof against loss or damage by the risks of war, whenever it shall appear to the Secretary that American vessels, shippers or importers in American vessels, or the masters, officers, or crews of such vessels, are unable in any trade to secure adequate war-risk insurance on reasonable terms.

"The Bureau of War Risk Insurance, subject to the general direction of the Secretary of the Treasury, shall, as soon as practicable, make provisions for

the insurance by the United States, as further provided in section three a, of masters, officers, and crews of American merchant vessels against loss of life or personal injury by the risks of war, and for compensation during detention following capture by enemies of the United States whenever it shall appear to the Secretary that in any trade the need for such insurance exists."

SEC. 3. That there is hereby added to such act a new section, to be known as section two a, to read as follows:

"Sec. 2a. That the Bureau of War Risk Insurance, with the approval of the Secretary of the Treasury, is hereby authorized to make provisions for the reinsurance by the United States of vessels of foreign friendly flags or their cargoes, or both, when such vessels or their cargoes are insured by the Government of any country which is at war with an enemy of the United States; and, further, to reinsure with the Governments of any countries which are at war with an enemy of the United States American vessels and their cargoes."

SEC. 4. That section three of such act is hereby amended to read as follows:

"Sec. 3. That the Bureau of War Risk Insurance, with the approval of the Secretary of the Treasury, is hereby authorized to adopt and publish forms of war-risk policies and to fix reasonable rates of premium for the policies which it is authorized to issue under this act, which rates shall be subject to such change to each port and for each class as the Secretary shall find may be required by the circumstances. All proceeds of the aforesaid premium and from salvage which have been or are hereafter received shall be covered into the Treasury of the United States to the credit of the Bureau of War Risk Insurance, and in addition to all other appropriations made under this act are hereby permanently appropriated for the purpose of paying losses and return premiums accruing under this act."

SEC. 5. That there is hereby added to such act a new section, to be known as section three a, to read as follows:

"Sec. 3a. That whenever it shall appear to the Secretary of the Treasury that the effecting of such insurance is desirable in the national interest in the case of vessels engaged in any trade, the owner of every American merchant vessel engaged in such trade shall insure the master, officers, and crew of such vessel against loss of life or personal injury from war risks as well as for compensation during detention by an enemy of the United States following capture.

"Such insurance shall be effected either with the Bureau of War Risk Insurance or in insurance companies, and on terms satisfactory to the Secretary of the Treasury.

"Such insurance shall provide, and the Bureau of War Risk Insurance is authorized to write policies so providing—

"(a) In case of death, permanent disability which prevents the person injured from performing any and every kind of duty pertaining to his occupation, or the loss of both hands, both arms, both feet, both legs, or both eyes, or any two thereof, for the payment of an amount equivalent to one year's earnings, or to twelve times the monthly earnings of the insured, as fixed in the articles for the voyage (hereinafter referred to as the principal sum), but in no case shall such amount be more than $5,000 or less than $1,500;

"(b) In case of any of the following losses, for the payment of the percentage of the principal sum indicated in the following tables:

"One hand, fifty per centum;

"One arm, sixty-five per centum;

"One foot, fifty per centum;

"One leg, sixty-five per centum;

"One eye, forty-five per centum;

"Total destruction of hearing, fifty per centum;

"That the Bureau of War Risk Insurance may include in its policy undertakings to pay specified percentages of the principal sum for other losses or disabilities; and

"(c) In case of detention by an enemy of the United States, following capture, for the payment during the continuance of such detention of compensation at the same rate as the earnings of the insured immediately preceding such detention, to be determined in substantially the same manner as provided in subdivision (a) of this section.

"The aggregate payments under this section in respect to any one person shall not exceed the amount of the principal sum.

"Payments provided for in this section shall be made only to the master, officer, or member of the crew concerned, except that a payment for loss of life shall be made to the estate of the insured for distribution to his family free from liability of debt, and payment on account of detention by an enemy following capture shall be made to dependents of the person detained, if designated by him.

"No claim under this section shall be valid unless made by the master, officer, or member of the crew concerned, or his estate, or a person designated under this section, within two years after the date on which the President suspends the operations of this act in so far as it authorizes insurance by the United States."

SEC. 6. That there is hereby added to such act a new section to be known as section three b, to read as follows:

"Sec. 3b. That in the event of failure of the owner of any vessel to effect insurance of the master, officers, and crew of such vessel prior to sailing, in accordance with section three a of this act, the Secretary of the Treasury is hereby authorized to effect such insurance with the Bureau of War Risk Insurance at the expense of the owner of such vessel, and the latter shall be liable for such expense and, in addition, to a penalty of not exceeding $1,000. The amount of such premium, with interest and of the penalty and of all costs, shall be a lien on the vessel."

SEC. 7. That section five of such act is hereby amended to read as follows:

"Sec. 5. That the Secretary of the Treasury is authorized to establish an advisory board, to consist of three members skilled in the practices of war-risk insurance, for the purpose of assisting the Bureau of War Risk Insurance in fixing rates of premium and in adjustment of claims for losses, and generally in carrying out the purposes of this act; the compensation of the members of said board to be determined by the Secretary of the Treasury, but not to exceed $20 a day each, while actually employed. He is likewise authorized to appoint two persons skilled in the practices of accident insurance for the purpose of assisting the Bureau of War Risk Insurance in the adjustment of claims for death, personal injury, or detention; the compensation of the persons so appointed to be determined by the Secretary of the Treasury, but not to exceed $20 a day each, while actually employed. In the event of disagreement as to the claim for losses, or amount thereof, between the said bureau and the parties to such contract of insurance an action on the claim may be brought against the United States in the district court of the United States, sitting in admiralty, in the district in which the claimant or his agent may reside."

SEC. 8. That there is hereby added to such act a new section to be known as section five a, to read as follows:

"Sec. 5a. No claim agent or attorney shall be entitled to receive any compensation whatever for services in the collection of claims against the Bureau of

War Risk Insurance for death, personal injury, or detention, except when proceedings are taken in accordance with section five in a district court of the United States, in which case the judge shall, as a part of his determination and order, settle and determine the amount of compensation not to exceed ten per centum of amount recovered, to be paid by the claimant on behalf of whom such proceedings are instituted to his legal adviser or advisers, and it shall be unlawful for any lawyer or other person acting in that behalf to ask for, contract for, or receive any larger sum than the amount so fixed."

SEC. 9. That section seven of such act is hereby amended to read as follows:

"Sec. 7. That for the purpose of paying losses and return premiums accruing under the provisions of this act there is hereby appropriated out of any money in the Treasury of the United States not otherwise appropriated, the sum of $50,000,000."

SEC. 10. That section eight of such act is hereby amended to read as follows:

"Sec. 8. That there is hereby appropriated, for the purpose of defraying the expenses of the establishment and maintenance of the Bureau of War Risk Insurance, including the payment of salaries herein authorized and other personal services, and for the purchase of necessary books of reference, periodicals, etc., that may be paid for in advance out of any money in the Treasury of the United States not otherwise appropriated, the sum of $250,000."

SEC. 11. That section nine of such act is hereby amended to read as follows:

"Sec. 9. That the President is authorized whenever in his judgment the necessity of further war insurance by the United States shall have ceased to exist to suspend the operation of the act, in so far as it authorizes insurance by the United States against loss or damage by risks of war, which suspension shall be made, in any event, within four years after the passage of this act, but shall not affect any insurance outstanding at the time or any claims pending adjustment. For the purpose of the final adjustment of any such outstanding insurance or claims, the Bureau of War Risk Insurance may, in the discretion of the President, be continued in existence a further period not exceeding three years."

SEC. 12. That the act entitled "An act to amend an act entitled 'An act to authorize the establishment of a Bureau of War Risk Insurance in the Treasury Department,' approved September second, nineteen hundred and fourteen," approved August eleventh, nineteen hundred and sixteen, and the act entitled "An act to amend an act entitled 'An act to authorize the establishment of a Bureau of War Risk Insurance in the Treasury Department,' approved September second, nineteen hundred and fourteen," approved March third, nineteen hundred and seventeen, are hereby repealed.

Approved, June 12, 1917.

Pursuant to this amended act, the Secretary of the Treasury issued the following order: No. 1 A.

NOTICE TO VESSEL OWNERS.

INSURANCE OF MASTERS, OFFICERS, AND CREWS OF AMERICAN MERCHANT VESSELS AGAINST LOSS OF LIFE OR PERSONAL INJURY BY THE RISKS OF WAR AND FOR COMPENSATION DURING DETENTION BY AN ENEMY OF THE UNITED STATES FOLLOWING CAPTURE.

It appearing to me that the effecting of such insurance (as described above) is desirable in the national interest in the case of American vessels engaged in the following trades:

From all ports to Europe and ports on the Mediterranean coast of Africa, and vice versa.

The owners of such vessels are hereby given notice and are required on all such vessels sailing from a United States port on or after June 26, 1917, and on all such vessels sailing from a foreign port on and after July 10, 1917, to effect insurance of the masters, officers, and crews against loss of life or personal injury from war risks as well as for compensation during detention by an enemy of the United States following capture. Such insurance shall be effected either with the Bureau of War Risk Insurance, Treasury Department, Washington, D. C., which may be done through collectors of customs or with insurance companies, and on terms satisfactory to the Secretary of the Treasury. The insurance in the principal sum shall be for an amount in respect to each person equivalent to one year's earnings or to twelve times the monthly earnings of the insured, as fixed in the articles for the voyage, but in no case shall such amount be more than $5,000 or less than $1,500.

In the event of failure of the owner of any vessel to effect the insurance required, the Secretary of the Treasury will effect such insurance with the Bureau of War Risk Insurance at the expense of the owner of such vessel, and the latter shall be liable for such expense and, in addition, to a penalty of not exceeding $1,000. The amount of such premium with interest and of the penalty and of all costs shall be a lien on the vessel.

All in accordance with an act approved by the President September 2, 1914, as amended June 12, 1917.

W. G. McAdoo,
Secretary of the Treasury.

Dated: Washington, D. C., *June 19, 1917.*

TREASURY DEPARTMENT,
Bureau of War Risk Insurance.
Form 11.

A Division of Seamen's Insurance has been organized and is issuing policies on the lives of masters, officers, and crews of American merchant vessels. The form of policy used is given below.

Form 16. No. 6 A.

Policy No. S. I. ____.

THE UNITED STATES OF AMERICA.

TREASURY DEPARTMENT.

BUREAU OF WAR RISK INSURANCE.

WASHINGTON, D. C.

Does hereby insure _____ _____ for account of the master, officers, and crew of the American vessel called the _____ _____, during a voyage at and from _____ _____ to _____ _____, sailing about _____ ____, during their employment on or by said vessel for the period of the aforesaid voyage, beginning, in respect to each person insured, from the time such person signs the articles for the aforesaid voyage, or, if already on articles for a series of voyages or period of time, from the inception of the aforesaid voyage (i. e., when the vessel is ready to begin the loading of cargo for the aforesaid voyage or to sail in ballast) and continuing until such person is discharged or the termination of the aforesaid voyage (i. e., when the vessel is ready to begin the loading of cargo for another voyage or to sail in ballast), whichever may first occur, for _____ dollars.

In case of claim, to be paid in funds current in the United States.

Against loss of life and personal injury to the master, officers, and crew by the risks of war, but only to the extent specified in the following schedules:

SCHEDULE 1.

Master _____ $
Chief officer _____
Chief engineer _____
_____
_____
_____
Members of crew, at $1,500 each, or— _____
Total sum insured _____

and this policy is issued in consideration of the payment of a premium of _____ dollars, being _____ per cent of the total of the sums hereby insured.

The amount for which each person is insured, according to this schedule, is hereafter referred to as the principal sum.

SCHEDULE 2.

The United States will pay, in case of loss, an amount to be determined by applying the percentage shown below to the amount for which the master, officer, or member of the crew is insured, as follows:

	Per cent.		Per cent.
Life	100	Hand	50
Both hands	100	Arm	65
Both arms	100	Foot	50
Both feet	100	Leg	65
Both legs	100	Eye	45
Both eyes	100	Total destruction of hearing	50

The indemnities referred to above are payable, provided loss results directly and exclusively from bodily injuries within 90 days from the date of accident. Loss shall mean, with regard to hands and feet, arms and legs, dismemberment by severance at or above wrist or ankle, knee or elbow joints, or the complete and irrecoverable loss of function. With regard to eyes, complete and irrecoverable loss of sight. With regard to hearing, total and irrecoverable loss of hearing in both ears.

The payment for loss of life will be made by installments (the number of which shall be determined by the Bureau of War Risk Insurance), until the principal sum insured has been paid, but without interest.

All other payments will be made in a lump sum.

SCHEDULE 3.

For injury not described in Schedule 2, but not for illness, resulting in permanent disability preventing the person injured from performing any and every kind of duty pertaining to such person's occupation, the United States will pay by installments or in a lump sum, at the option of the Bureau of War Risk Insurance, compensation until such time as the total compensation so paid shall amount to the principal sum for which the injured master, officer, or member of the crew is insured.

By permanent disability is meant wholly and continuously disabled from performing the duties of any occupation for wages or profit.

Compensation for detention.

In event of detention by an enemy of the United States following capture, the United States will pay compensation at the same rate as the earnings of the detained person immediately preceding such detention for the period of detention until such time as the total compensation so paid shall amount to the principal sum for which the detained master, officer, or member of the crew is insured.

Payees.

All payments provided for in this policy will be made only to the master, officer, or member of the crew concerned, except that a payment for loss of life will be made to the estate of the insured for distribution to his family free from liability of debt and payment of compensation on account of detention will be made to dependents of the master, officer, or member of the crew detained if designated by the person detained.

Limit of payments.

The aggregate payments in respect to any one person under this policy shall not exceed the principal sum for which the master, officer, or member of the crew is insured.

Overlapping of policies.

If a person insured by this policy be insured by the Bureau of War Risk Insurance by a policy or policies for a voyage immediately prior and or subsequent to the voyage hereunder insured only one of all of such policies shall be deemed to be in force at any one time, notwithstanding any provision in any or all such policies to a contrary effect.

Physical examination.

The United States shall have the right and an opportunity to examine the master, officer, or member of the crew who makes any claim under this policy.

Notice of loss and claim.

In the event of loss and claim, prompt notice should be given to the Bureau of War Risk Insurance, and also, if the master, officer, or member of the crew be abroad, to the nearest American consul.

Limitation of date of claim.

No claim hereunder shall be valid unless made by the master, officer, or member of the crew concerned, or his estate, or a designated person, within two years after the date on which the President suspends the operation of the act establishing the Bureau of War Risk Insurance in so far as it authorizes insurance by the United States.

Claim agents and attorneys.

No claim agent or attorney shall be entitled to receive any compensation whatever for services in the collection of claims against the Bureau of War Risk Insurance for death, personal injury, or detention, except that when any proceedings have been taken in accordance with section 5 of the act, then the judge of the District Court of the United States shall, as a part of his determination and order, settle and determine the amount of compensation, not to exceed 10 per cent of the amount received, to be paid by the claimant on behalf of whom such proceedings are instituted to his legal advisor or advisors, and it shall be unlawful for any lawyer or other person acting in that behalf to ask for, contract for, or receive any larger sum than the amount so fixed.

Deviation and change of voyage.

It is agreed that this insurance shall not be vitiated by a deviation or change of voyage of the vessel, in which event an additional premium shall be paid if required.

Return of premium.

After the adjustment of all losses in the event that the whole of the premiums received by the Bureau of War Risk Insurance (less any return premiums paid) shall exceed the claims or losses paid by the bureau, plus the expense of administering and conducting the bureau, and the total of the premiums received for insurance of masters, officers, and crews shall exceed the claims paid by the bureau on this kind of insurance, plus a proportion of the expense of the administration and conduct of the bureau (to be determined by the Secretary of the Treasury), a refund will be made in such manner and in such amount as the Secretary of the Treasury may decide, on surrender of this policy.

IN WITNESS WHEREOF the United States of America has caused this policy to be signed by its Secretary of the Treasury, but it shall not be valid until countersigned by William C. De Lanoy, Director of the Bureau of War Risk Insurance, or John J. Crowley, Assistant to the Director.

W. G. MCADOO,
Secretary of the Treasury.

Countersigned at Washington, D. C., this ____ day of ------, 191--.

The amount of insurance thus far written has not yet been given out by the Treasury Department.

The first losses of lives insured under this amended act were announced by the Secretary of the Treasury on July 14 in the following statement:

The steamer *Kansan*, whose sinking was reported by the Navy Department July 10, was the first vessel lost carrying full insurance for its master, officers, and crew under the order of June 19, making such insurance compulsory for all vessels sailing to the war zone on and after June 26. This order was issued by authority of the act of June 12, 1917.

POLICY OF $92,450 WRITTEN.

A policy of $92,450, written by the Bureau of War Risk Insurance of the Treasury Department for the American-Hawaiian Steamship Co., covered the master, 7 officers, and 46 members of the crew of this vessel. Premiums for seamen's insurance are paid by owners of vessels.

As a result, the estates of the four men who lost their lives will recover sums aggregating $7,200. In addition to this loss of life, the compulsory insurance will protect any members of the crew that may have been injured.

GOVERNMENT INSURANCE FOR UNITED STATES SOLDIERS AND SAILORS.

In order to frame legislation providing adequate compensation and allowances to dependents of soldiers and sailors who may be killed or disabled in their country's service the chairman of the Committee on Labor of the advisory commission of the Council of National Defense appointed Judge Julian W. Mack, of the United States Circuit Court, of Chicago, chairman of a committee on compensation for soldiers and sailors and their dependents. On July 2 the Secretary of the Treasury called together representatives of insurance companies, and at their request appointed a committee to draft appropriate legislation along the lines suggested. Both of these committees are cooperating with the Bureau of War Risk Insurance of the Treasury Department, which is authorized to insure the lives of merchant seamen. Previously the Council of National Defense had requested Edwin F. Sweet, Assistant Secretary of Commerce, to outline a proposed system of Government insurance, and his report is referred to later. Capt. S. Herbert Wolfe, a member of the committee selected by Judge Mack, recently made a study of the plan in operation in Canada and submitted a report to the United States Department of Labor.

According to Capt. Wolfe's report, which was summarized in the MONTHLY REVIEW for July, 1917 (pp. 8 to 14), Canadian soldiers and sailors are required to assign at least half, but not more than two-thirds, of their pay to their dependents. This money is automatically paid to the dependents by the Canadian Government. The Government makes separation allowances to privates of $20 a month. The Canadian Patriotic Fund, which is not a Government organization, makes an additional allowance if there are dependents. The result of these provisions is that a private with three children between the ages of 10 and 15 is able to provide for his family $60 a month. Further provision is made for dependents of the private or of any other soldier or sailor if he is killed or disabled.

Judge Mack and his associates are trying to determine what provision should be made for American soldiers and sailors. In his judgment the responsibility of providing funds for separation allowances, compensation for injuries, and pensions, should rest upon the Government, but the program has not yet been completed. Whether the administration of the plan when agreed upon should be given over to one of the existing bureaus or Government departments or to a new bureau or commission directly responsible to Congress and the President is a matter of importance to be decided. In regard to the fixing of the indemnity, Judge Mack says:

> The determination of separation allowances and the method and the amount, the determination of the grant to be made for disability of each and every

kind and for death, and the determination of methods of rehabilitation are the primary elements in the task before us. Of course this involves the question of insurance or indemnity. First, is it advisable that there should be a definite, fixed compensation for everybody in case of death? It seems to me that it is of the utmost importance that the psychological impress be made upon the country in some striking fashion contemporaneously with the announcement of the selection of troops.

The thing must be done as a whole; the question of separation allowance is tied up with those of compensation, indemnity, and insurance. The suggestion has been made that if the Government establish an insurance bureau and allow insurance for a certain amount in addition to that indemnity, which is going to be given for nothing, the premium therefor shall be taken from the pay of the soldier. Another suggestion made is that a part of the family allowance be taken from the pay of the soldier. There may be conflict between these two phases of the matter. The subject can be determined only as a whole. It may result in not merely one bill being presented in Congress, but in half a dozen bills. All of the bills should be coordinated.

The following are excerpts from Assistant Secretary of Commerce Edwin F. Sweet's letter to the Council of National Defense, submitting a proposed system of Government insurance for soldiers and sailors:

The best interests of the country at large, as well as justice to those engaged in war service and their dependents, demand that provision for insurance be made and that, like other war provisions, it be made with as little delay as possible.

Our soldiers and sailors should have not only the full benefit of this protective principle, but the greater hazard of their service, its vital importance, and their inability to buy insurance except at rates which in many cases would be prohibitive, emphasizes the duty of the Government to make proper provision for them and their dependents.

That such provision should be made in advance seems to me equally clear. This is a departure from our policy in former wars, but experience has shown the error of the tardy, erratic, and expensive policy of the past system of pensions. A dollar at the right time is worth more than two at the wrong time; a belated generosity is a poor substitute for timely action. Soldiers and sailors fully understand the dangers of their employment and are entitled to know that suitable provision has been made for their dependents and for themselves in the event of death, captivity, or disability, and should not be left to guess that the right thing will be done after the war is over.

I believe there should be created, in connection with one of the existing executive departments of the Government, a soldiers and sailors' indemnity bureau, with a competent man of insurance experience at its head; that the necessary actuarial and clerical assistance should be provided; that protection for a definite amount, not exceeding $4,000, should be automatically furnished to every one in the military and naval service of the United States, without regard to rank and without expense to the insured; that such insurance or protection should cover partial and total disability as well as death; that no medical examination should be required except that necessary for admission into the service; that all losses should be paid in regular installments; that all adjustments should be made with the least possible delay; and that a limit,

analogous to statutes of limitation, should be fixed for the correction of records and the presentation of claims.

In addition to the protection thus furnished to all engaged in war service, I think the same bureau should be authorized to furnish death and casualty benefits or protection to soldiers and sailors to the amount of $6,000 to one individual, upon terms as favorable as in times of peace.

From the experience of the Bureau of War Risk Insurance, it is conceivable that this can be done by the Government without material loss. The funds that a private corporation applies to commissions, medical examination fees, advertising, etc., would be available by the Government for the payment of losses. But if loss should result, a proper recognition of the obligation conferred upon the general public by the defenders of their country demands that it should be met by the Government and thus fall upon all who receive the benefit of the service rendered rather than upon those who render it.

Men engaged in war service who wish to buy protection for their dependents and themselves beyond that freely furnished by the Government ought not to be left powerless to do so. On the contrary, sound public policy dictates that the purchase of additional insurance should be encouraged. It means fewer dependents in the future. I therefore believe that both justice and self-interest demand that the Government itself furnish such insurance. This has the further advantage of introducing an element of flexibility into the system which can not well be provided in the fixed amount of insurance to be furnished without expense to the insured, and adapts it to the varying needs of families which differ in the number of dependents or in the accustomed scale of living.

The following suggestions have been made:

1. That the Government bureau, or the department of which it is a part, be given authority to arrange with one or more insurance corporations for the transaction of this business if expense can be saved thereby.

2. That at the close of the war impaired risks which have not become actual claims but which insurance associations would not accept, be continued by the Government.

3. That the amount of protection to be furnished without cost to the insured be in proportion to the number of dependents, even though the total may, in exceptional cases, exceed the suggested maximum of $4,000.

4. That discretion be given to the bureau for the payment of benefits in installments of varying amount whenever it should be clearly shown that the interest of the beneficiaries requires it.

This letter was presented to the representatives of insurance companies who met, at the suggestion of the Secretary of the Treasury, in Washington on July 2, 1917, to work out a plan to provide insurance for the men in the United States Army and Navy and for their dependents. Representatives of 124 insurance companies, of the advisory commission of the Council of National Defense, and of the Departments of Commerce, War, Navy, and the Treasury, attended this conference. The Secretary of the Treasury presided and in a brief introductory statement emphasized the desirability of furnishing some sort of insurance, provided either by the insurance companies or the Government, or by both cooperatively, for the protection of soldiers and sailors so that they might not have to depend

upon future legislation for the granting of compensations which have heretofore, under our policy, taken the form of pensions.

At the conclusion of the Secretary's remarks, the discussion was opened by the representative of the Equitable Life Assurance Society of New York, who read a statement to the effect that (1) no part of the cost of new insurance for our fighting forces can be paid from the funds of the present policyholders; that (2) the entire mortality cost must come from the premiums on the highly hazardous class insured; that (3) this cost must either be paid by the men themselves, or by the men and the Government combined, or by the Government alone; that (4) all that life insurance companies can consistently offer the Government in this case is the use of their organizations and machinery at actual cost.

This seemed to be the attitude of most of the representatives of the insurance companies, some of whom expressed the opinion that the protection contemplated is not a problem of life insurance but is a war problem—one of indemnity—and should be solved by the Government. They were, however, unanimous in placing their trained forces at the disposal of the Government in order to carry out any plan that might be decided upon.

In the course of the discussion, Judge Julian W. Mack said:

> Mr. Chairman, this entire question is merely part of a larger scheme that involves the entire physical duty of the Government to the soldiers and sailors and to their families. Two other parts of the scheme of course have not been touched upon to-day. One is the question of the separation allowance; that is, the provision to be made by the Government for the family in case of need or perhaps without need, where the head of the family has been taken away. Then after the question that you have been debating comes the question of the rehabilitation of the disabled man. I am saying this only for this reason, to suggest to you that in addition to the Secretary of War having designated Capt. Wolfe to study these problems, and the Secretary of Commerce having designated the Assistant Secretary, Mr. Sweet, to study the problems, the Council of National Defense has imposed upon the committee of labor of the advisory council the duty of asking some one to take up the entire problem and draft legislation. That committee last week asked me to be the one who should be chairman of the committee on that subject, and I rise now only to suggest that any committee that you may appoint now might cordially cooperate with these other committees that are engaged on these problems.

Following the discussion a vote was taken, resulting almost unanimously in favor of having the Government rather than the insurance companies undertake to indemnify soldiers and sailors or their dependents. The conference, being composed almost entirely of insurance men, seems to have considered the subject as an insurance measure rather than as a compensation matter.

A resolution was adopted requesting the appointment of a committee to work out a plan along the lines suggested, and, as stated

above, the Secretary of the Treasury later selected such committee, George E. Ide, president of the Home Life Insurance Co., being named as chairman. This committee, together with Judge Mack's committee, met in the office of the Secretary of the Treasury on July 25 and discussed a comprehensive plan of insurance and indemnity. Under this plan dependents of soldiers and sailors in service will be provided for through allotments from their pay, supplemented by separation allowances by the Government. The amount of the Government allowance will depend upon the size of the family and, as to others than the wife and children, upon the actual dependency upon the men. The separation allowance will be made only if the soldier or sailor makes an allotment for his dependents out of his pay. The risk of death or disability will be compensated for somewhat on the analogy of workmen's compensation acts, with the compensation measured by the men's services, the size of the families, and the loss to the family. Partial disabilities will be compensated for upon a percentage of the compensation for total disability. The cost of this compensation naturally must be paid wholly by the Government.

In addition to direct compensation to take the place of pensions, the plan in contemplation will go further and establish an insurance system by the Government under which our soldiers and sailors may obtain insurance at premium rates based upon the mortality experience tables of peace times. The excess cost due to increased mortality and disability war risk should clearly be borne by the Government, and the cost of administering the insurance department for the benefit of the Nation's fighting men is also a proper governmental charge. The tentative plans provide for insurance of officers and men in amounts ranging from $1,000 to $10,000, with provision for payments in monthly installments instead of in a lump sum. Death or total disability will mature the insurance.

In working out the new system it is deemed essential that a system for reeducation and rehabilitation be established, so that injured men may be fitted as far as possible for lives of usefulness either in their former or some other vocation.

At this conference a report was also submitted by the committee of insurance men suggesting certain changes in the proposed plan. In working out this plan there has been cordial cooperation between the departments of the Treasury, War, Navy, Commerce, and Labor and the Council of National Defense.

HOW FRANCE RETURNS HER SOLDIERS TO CIVILIAN LIFE.[1]

Mention has been made in the MONTHLY REVIEW of Canada's effort, through its Military Hospitals Commission, to care for its disabled soldiers and sailors returning from the European conflict and assist them to find employment for which, because of their incapacities, they are adapted, but no authoritative information had come to hand telling how France is returning her soldiers to civilian life until a recent report on this subject was made by a major in the Canadian Army Medical Corps and submitted to the director of medical services of the Canadian contingents. France, it appears, has passed through difficulties which are only commencing to present themselves to Great Britain and to Canada and which may ultimately be placed before the United States Government, and it behooves these allied nations to take full advantage of the lessons which French experience teaches, recognizing, of course, that measures suited to one nation can not, without modification, be applied to the others. In France the war created many needs not provided for by existing social organizations, resulting in the springing up of many new bodies designed to meet those needs. Proper coordination of effort would undoubtedly make them more effective and various bills are being considered by French legislative bodies to secure the desired end. "The methods followed by the French in returning men discharged from the armies to civilian life have by no means reached a final form."

The following is a concise summary of the report:

"Definite principles have governed the creation and design of measures adopted by France in caring for her discharged soldiers and sailors.

"France, with her whole strength, is fighting a national war; for that reason, the detriments incurred by Frenchmen are to be distributed, as equally as possible, among the citizens who compose France. This report considers only the rehabilitation of men who have suffered a personal detriment; discussion of the equalization of economic detriment is avoided.

"To secure the equitable return to civilian life of ex-soldiers and ex-sailors who have suffered physical or mental detriment, as a result of their service, is a work of large dimensions. Like every other

[1] How France Returns Her Soldiers to Civilian Life: A report to Surg. Gen. G. C. Jones, C. M. G., Director of Medical Services, Canadian Contingents, by John L. Todd, major, C. A. M. C. April 20, 1916. 281 typewritten pp.

large undertaking, it can be accomplished best, under the administrative control of a single central directing body, by numerous executive agencies, each closely connected with the field of its operations. The need for a central administrative body has been recognized, and partly met; it is probable that it will be completely met.

"In the organization of the executive agencies it is to be remembered that the rehabilitation of disabled men is, in great part, a temporary operation and that permanent machinery should not be created for effecting it unless a permanent use for that machinery exists; therefore, existing institutions and public services are employed whenever possible in executing the various operations by which disabled men are cared for.

"While it has been, and will be, necessary to profit by the operation of important works of private benevolence, laws are about to be made which will prevent the initiation of unsound measures by irresponsible organizations dependent for funds upon private subscriptions. Private benevolence, indeed, should find no place in providing the advantages which disabled men should receive as a right from their fellow citizens.

"The interest of the men has been the first consideration in the designing of the methods adopted for returning discharged soldiers and sailors to civilian life; all the measures have been designed with the object of returning the men in the best and quickest manner to an independent position in civilian life. Any delay in doing so, dependent upon administrative difficulties—e. g., preparation of discharge or other documents—is rightly held to be inadmissible.

"The procedure by which the rehabilitation of disabled men is effected may be divided conveniently into five stages: (1) Active medical and surgical treatment; (2) functional reeducation; (3) the provision of artificial appliances; (4) professional reeducation (vocational training); (5) establishment in civilian life.

"Although this division is made, it is, in a sense, an artificial one; since treatment, functional and professional reeducation and the provision of artificial appliances are complementary processes. They should all be carried out as early as possible in the progress of a patient; they will often be performed simultaneously. Consequently, they can best be carried out either in a single institution or in special institutions closely allied in space and organization. Such an institution, or group of institutions, is called a center of reeducaton. Many centers have been established in France; those at St. Maurice and at Bordeaux have been organized as models. The importance of securing a proper detailed organization in these institutions, from the commencement, is great.

"The responsibility for controlling the treatment received by a soldier or sailor rests with the medical service of the army or the navy, until the soldier or sailor concerned is discharged. At present, the general rule is that soldiers and sailors are not discharged from their respective services until their functional reeducation is complete, and until they have received any artificial appliances which they may require; it seems possible, that, in the future, regulations will make it necessary for men requiring it, to accept not only medical treatment but also professional reeducation.

"The responsibility of recommending the discharge of a man as medically unfit for service rests with carefully instructed, competent, and perfectly equipped boards composed of medical officers belonging to and appointed by the French Army Medical Service. These boards have also the responsibility, both of deciding whether a disability results from service—and is therefore pensionable—and of deciding the degree of incapacity resulting from a pensionable disability. The pension awarded in respect of a disability varies directly with the degree of incapacity resulting from it.

"It has been accepted, as a principle, first, that each man requiring an artificial appliance is to receive the appliance, of the best possible type, most suited to his needs, and, secondly, that artificial appliances supplied by the Government are to be maintained in repair and replaced, when necessary, by the Government. An orthopedic commission has been appointed for the purpose of establishing the types of artificial appliances to be provided by the Government. It is possible that the maintenance of appliances will be provided for by paying an annual sum for their repair to those using them.

"The choice of a future occupation for a disabled man is a matter of the greatest importance. It can be made, rightly, only by those who have a special competence in such matters, who are accustomed to estimate a man's aptitudes, and have a knowledge of existing or probable opportunities for occupation."

In this connection it should be stated that in selecting an occupation for a disabled man the knowledge and dexterity already acquired in the exercise of a trade or profession should not be lightly discarded. It is estimated that about 90 per cent of the men disabled can be made capable of usefully performing either their former employment or some occupation directly connected with it. Experience seems to show that about 80 per cent of men wounded can be reeducated for technical occupations. About 45 per cent of the wounded, it is stated, can earn a normal wage, if about 10 per cent of these become specialists; about 20 per cent of the wounded will be

able to earn only part of the normal wage; 15 per cent of the wounded can be made capable of performing small duties for whom, if for any, it will be necessary to establish special workshops; the remaining 20 per cent of the wounded will be unable to support themselves, although even some of these will be able to earn something.

It appears that four main plans are being followed in providing means for giving professional reeducation to disabled men: (1) The establishment of special schools; (2) the provision of lodging houses permitting the attendance of men at existing technical schools, or, as apprentices, at establishments or firms engaged in business; (3) training schools established by guilds and similar organizations; (4) the payment of allowances to individuals in order to provide for their subsistence, at their homes or elsewhere, while undergoing reeducation.

"It has been accepted, as a principle, that the economic soundness of measures connected with the establishment of disabled men in civilian life must never be allowed to depend upon any feeling of beneficence toward them. The position of a disabled soldier must be an assured one and dependent in no way upon the good will or assistance of others. It is expected that practically all discharged and disabled ex-soldiers and ex-sailors will be absorbed in the civil population and that it will be almost unnecessary to establish new old soldiers' homes.

"The following are important matters connected with the establishment of ex-soldiers and ex-sailors in civilian life: (1) Provision of pensions; (2) assistance to employment; (3) advancement of capital; (4) increased cost of insurance; (5) settlement on land; (6) watching the interests of disabled men. The old pension laws, which existed before the commencement of the war, have been found to be inadequate. It is certain that they will be replaced by new laws.

"The principles which the laws, finally adopted, will observe are definite. A totally disabled man must receive a pension permitting him to support his family in decency. Only the extent of the incapacity resulting from an injury determines the grade of a pension; neither social rank, nor earning powers, nor any other factor but the extent of the incapacity is considered. In order to assist medical officers in estimating the extent of the incapacity resulting from a given disability, a guide—a disability table—has been prepared for their use; it has been found to be indispensable. A disability is pensionable only in the extent to which it is due to, or aggravated by, military service. While, in theory, a soldier has the right to refuse an operation involving the shedding of blood, in practice an

unreasonable refusal to submit to an operation, which would result in the lessening of a disability, is held to be sufficient reason for the reduction of the pension to the amount which would be awardable were the existing disability diminished by operation. Pensions granted in respect of a disability are the inalienable property of the grantee. They are paid quarterly and can be drawn upon, to a small extent in advance, through the post office.

"Offices established by the Government will assist disabled men to find employment in every part of France. Laws have been framed providing that disabled men, other things being equal, should be given preference over other applicants for employment in Government service and in any enterprise enjoying governmental concessions or assistance.

"In order to provide for the support of the families of men who, perhaps during a period of from one to two years, are receiving professional reeducation, the Government either continues to pay the separation allowance or pays the pension, whichever may be the greater. After reeducation has been completed, financial assistance—it is already given by certain societies—will be required by the artisan to establish him in his business, and by the farmer, who will require seeds, stock, farming implements, and something to live upon, until the return of his first season comes in.

"It is recognized that accident insurance and life insurance, as a rule, must cost more for disabled men than for those who are sound. The principle has been recognized that, when the disability is due to military service, the increased cost of insurance should be borne, up to a certain amount, by the State. Up to the present, no procedure for relieving disabled men from the increased cost of life insurance has been made. A proposal to pay the increased cost of accident insurance from a fund contributed to by employers and by insurance companies will probably be adopted.

"The desirability of settling disabled men on the land has been recognized and various laws have been proposed with the object of making it easy for them to acquire rural property.

"Questions affecting discharged, perhaps disabled, soldiers and sailors (e. g. matters affecting pensions or land settlement) may become subjects of discussion in the future in the legislative chambers. It is proposed that one of the functions of the central body, administering matters connected with the return of ex-soldiers and ex-sailors to civilian life, will be to exercise a general watch over ex-soldiers' and ex-sailors' interests. Definite procedure has been adopted and arrangements made for dealing with cases of tuberculosis, with the blind, the deaf, and others requiring special treatment.

"The French nursing system has been successful in mobilizing many thousands of French women and in employing them usefully in the military hospitals.

"In France, Government and publicists alike have recognized the importance of securing a sound perception, in the general public, of the precise conditions in which ex-soldiers and ex-sailors will return to civilian life. Many methods have been employed in doing so, and there can scarcely be anyone in France capable of listening or reading who has not had an opportunity of becoming acquainted with the foundations of the measures described in this report."

MEETING THE PROBLEM OF THE RETURNED DISABLED SOLDIER IN CANADA.

Canada is giving considerable attention to the problem of the disabled soldier, the responsibility being at present divided among the Canadian Army Medical Corps, the Military Hospitals Commission, and the Board of Pension Commissioners, supplemented by provincial commissions. The first is concerned more intimately with giving the active medical and surgical treatment required by men overseas, and the Military Hospitals Commission limits its activities more or less completely to caring for men in Canada who are convalescent or require treatment of a special nature. The Board of Pension Commissioners looks after the granting and refusal of pensions for which soldiers apply. An extended outline of the work being done by the Military Hospitals Commission appeared in the MONTHLY REVIEW for June, 1917 (pp. 867–874).

Worthy of note in this connection is an article published in the University Magazine (Montreal) for April, 1917,[1] which discusses in general terms the principles that should be followed in Canada in caring for those members of her armed forces who have become disabled, the author, Thomas L. Jarrott, dealing only with the "rehabilitation of personal detriments incurred by soldiers and sailors during their service." He points out that it is the nation, the Dominion as a whole, and not provincial or civic governments, nor organizations supported by private citizens, which must bear the whole responsibility for the proper return of Canadian ex-soldiers and ex-sailors to civilian life, and urges the importance of three factors in the conduct and design of measures intended to accomplish this result:

> The first is our determination that the measures adopted shall be ideal for their purpose, and that they shall be administered with the broadest good will toward our men. The second factor, no less important but less evident, is that though the problem of providing for the return of our soldiers has many sides, it is but one problem and must be considered in a single coordinated plan, comprehensive in its design, if it is to be solved rightly. The third is—it is very necessary, if success is to be attained—that sound measures should be thought out and followed from the commencement; the failures of other nations prove this.

[1] The problem of the disabled soldier, by Thomas L. Jarrott. Pamphlet reprinted from the University Magazine [Montreal], Apr., 1917. 18 pp.

The article attempts to correct a misconception in the minds of many people that soldiers, especially if wounded, are entitled to a reward—a pension—sufficient to support them and their families almost in idleness to the end of their days. It is admitted that compensation is due to disabled men, but—

> The compensation due to them is not a gift from Canada as a reward for good service done. It is a value, paid as a right by Canadians, through their Government, to those of their fellow citizens who have been incapacitated by a personal detriment incurred in performing public service. Compensation is made so that those who receive it may be able, on equal terms and unhandicapped by their disability, to live in competition with those of their fellows who have not been incapacitated. The obligation to work, to be self-supporting, and to provide for his dependents exists for an ex-soldier just as it does for every Canadian citizen. That ex-soldiers, or their dependents, receive a pension does not relieve them, either in their own eyes or in those of their fellows, from an obligation to work according to their abilities and to support themselves if they can.

The misconception referred to prevailed in France at the beginning of the war, but a definite policy of public instruction was commenced, the thought being to impress upon the people the dual obligation existing between the State and its citizens.

> There is an obligation upon the State to insure an independent position to those who have been disabled in its service; and there is an obligation upon the citizen, both to be self-supporting in the measure of the ability remaining to him and to receive from his fellow citizens no more than is his due.

Pursuing this thought, the author of the article notes and subsequently discusses four conditions which he states must be satisfied before a disabled soldier can be considered to have become capable of working effectively and of supporting himself in competition with his fellows:

> Bodily or mental disability due to military service must be brought to an irreducible minimum.
>
> When it is necessary and possible, disabled men must be taught an occupation in order that they may become employable.
>
> If it is necessary, ex-soldiers must be assisted in obtaining employment.
>
> Pensions and other advantages must be given in compensation for any disability resulting from military service; the magnitude of the pension and of other advantages will vary in accordance with the extent of the disability in respect of which they are awarded.
>
> Each of these conditions must be satisfied; but it can not be too clearly understood that the provision of an adequate pension is the least important of the measures by which the personal rehabilitation of disabled soldiers and sailors may be secured.

The first condition, as already mentioned, is being met by the activities of the Military Hospitals Commission and the Canadian Army Medical Corps. In choosing the occupation for which a man is to be trained, his inclinations, his previous experience, his physical and

mental capacity, and his present condition must be considered. Employment may be found for ex-soldiers through special Federal and provincial bureaus and the cooperation of large corporations. In France, it is stated, arrangements are being made to remove a serious disadvantage which would otherwise prevent employers from engaging disabled men, by providing a scheme of insurance which will relieve employers from liability for the accidents to which disabled men, by reason of their disabilities, are especially exposed. Exclusive jurisdiction over the granting and refusal of pensions is vested in the Board of Pension Commissioners.

Careful treatment, the provision of the best artificial appliances, appropriate vocational training, assistance in obtaining suitable employment, and the granting of adequate pensions will permit almost every one of our disabled men to find an individual place for himself in the social organization of his country; each will become a wage earner, or perhaps a lodger, unable to work but supported by a pension insuring him decent comfort in some household. Consequently, there will be but few homeless, helpless men for whom it will be necessary to provide special institutions.

LABOR CONDITIONS IN INDUSTRIAL AND COMMERCIAL ESTABLISHMENTS IN FRANCE, JANUARY, 1917.[1]

A report on the labor supply in France, prepared by C. W. A. Veditz, American commercial attaché, Paris, appeared in the MONTHLY REVIEW for July, 1917, showing among other items the percentage of occupied workers compared with the normal number of workers in certain industries in France at various dates from August, 1914, up to July, 1916. Since the publication of that report later figures have been received,[1] bringing the data down to January, 1917. These figures are the results of an investigation by the factory inspection service, covering only such establishments as are subject to inspection laws; consequently mines and quarries, railroads and tramways, and establishments under the ministers of war and marine are not included. If these be considered and the number of persons employed in them be added to the number employed in establishments under the supervision of the labor office, it is reasonable to suppose that the number of persons employed in industry and commerce is considerably larger than that established by the above investigation and shown in the tables which follow.

The number of establishments for which data were reported by the inspectors in January, 1917, was 44,860, which under normal conditions furnished employment for 1,512,798 persons; the following data refer only to these establishments, and are entirely independent of any data reported at any preceding investigation.

The figures in the following tables are not to be taken as indicating in any manner the extent of unemployment, but rather the business situation in the industries considered. The decreases in employment shown do not mean that the workmen leaving the various industries are necessarily unemployed. An average of 24 per cent were mobilized and many who were unable to find employment in their usual occupation have accepted employment in industries which have not suffered from the war or even profited through it. It will be seen, for instance, that in January, 1917, certain groups of occupations had not recovered from the crisis of 1914. In the chemical and metallurgy groups, however, though the number of establishments in operation was below the normal the number of employees was far in excess of the number employed before mobilization.

[1] France. Bulletin du Ministère du Travail et de la Prévoyance Sociale, Nos. 1–3, January to March, 1917.

NUMBER OF ESTABLISHMENTS FURNISHING DATA RELATIVE TO INDUSTRIAL CONDITIONS PREVAILING DURING THE WAR AND NUMBER AND PER CENT IN OPERATION AT SPECIFIED DATES.

[From Bulletin du Ministère du Travail et de la Prévoyance Sociale, January to March, 1917, p. 2.]

Industrial group.	Number of establishments reporting.	Number in operation in—				Per cent of establishments in operation in—			
		August, 1914.	January, 1915.	January, 1916.	January, 1917.	August, 1914.	January, 1915.	January, 1916.	January, 1917.
Food preparation	4,236	3,192	3,720	3,851	4,015	75	84	91	95
Chemical	1,370	876	1,223	1,309	1,268	64	80	95	92
Rubber, paper, cardboard	850	362	698	730	771	42	70	86	91
Printing and binding	1,372	690	1,069	1,117	1,180	50	65	81	86
Textiles	3,481	1,060	2,605	2,812	2,981	30	62	81	86
Clothing, millinery, etc	9,177	4,897	7,127	7,978	8,373	53	69	87	91
Leather and hides	2,089	1,202	1,878	1,940	2,054	57	81	93	98
Woodworking	4,651	1,701	3,007	3,533	3,902	36	54	76	84
Metallurgy (base)	7,278	3,255	5,504	6,013	6,493	45	66	83	89
Metallurgy (fine)	546	60	248	319	446	11	30	58	82
Precious stones	97	10	39	42	53	10	16	43	55
Building trades, etc	1,956	791	1,169	1,363	1,397	40	46	70	71
Porcelain, pottery, glass, etc	1,151	361	690	726	871	31	46	63	76
Storage and transportation	385	263	320	364	374	68	79	94	97
Commerce	6,221	4,741	5,251	5,530	5,892	76	79	89	95
Total	44,860	23,461	34,548	37,627	40,070	52	68	84	89

NUMBER OF PERSONS EMPLOYED IN ESTABLISHMENTS FURNISHING DATA RELATIVE TO INDUSTRIAL CONDITIONS PREVAILING DURING THE WAR, AND NUMBER AND PER CENT AT WORK AT SPECIFIED DATES.

[From Bulletin du Ministère de Travail et de la Prévoyance Sociale, January to March, 1917, p. 3. The number of employees at work, as shown in this table, does not include mobilized workers.]

Industrial group.	Number of employees before the war.	Number of employees at work in—				Per cent at work in—			
		August, 1914.	January, 1915.	January, 1916.	January, 1917.	August, 1914.	January, 1915.	January, 1916.	January, 1917.
Food preparation	97,722	49,618	64,697	77,383	81,880	51	66	79	84
Chemical	77,799	34,067	53,009	75,080	91,366	44	68	96	117
Rubber, paper, cardboard	61,133	20,315	31,666	43,125	47,306	33	52	71	77
Printing and binding	42,687	14,915	17,736	21,232	23,777	35	42	50	56
Textiles	274,955	80,763	159,170	213,523	225,608	29	58	78	82
Clothing, millinery, etc	133,951	42,948	71,516	96,604	104,908	32	53	72	78
Leather and hides	67,525	28,226	46,307	56,124	60,962	42	69	83	90
Woodworking	81,636	19,274	32,258	51,741	62,897	24	39	63	77
Metallurgy (base)	369,573	125,591	230,418	427,430	585,760	34	62	116	158
Metallurgy (fine)	7,023	981	2,004	3,654	4,809	14	29	52	68
Precious stones	2,661	521	847	1,293	1,362	20	32	48	51
Building trades, etc	62,094	12,452	16,692	25,787	31,282	20	27	42	50
Porcelain, pottery, glass, etc	82,791	17,042	28,550	39,151	44,875	21	34	47	54
Storage and transportation	27,179	13,562	17,571	22,538	26,186	50	65	83	96
Commerce	124,069	64,226	72,127	83,758	88,414	52	58	67	71
Total	1,512,798	524,501	844,568	1,238,423	1,481,392	35	56	82	89

In January, 1917, 89 per cent of all the establishments were in operation, and employed 98 per cent of the normal number of persons. If to the 98 per cent employed be added the 24 per cent withdrawn by mobilization, the number of active and potential employees in January, 1917, exceeds the normal number by 22 per cent, which, with the increases noticeable in Government and other establish-

ments, raises the question as to the source of this increase. The report suggests that these additional employees may be refugees from invaded districts, and colonial and foreign laborers. It is, however, doubtful whether the number of colonials and foreigners compensates for the number of employees who departed at the outbreak of the war and when the Italian mobilization order was issued. The statement is made that industries and commerce have recruited their new labor largely from female refugees.

The following table shows (1) the estimated proportion of mobilized workers and (2) the per cent of increase or decrease in number of employees in specified months, 1914 to 1917, in the establishments investigated as compared with the normal number of employees before the war. In this table both active and mobilized workers are considered as employees. That is to say, in computing the percentages of increase or decrease the decrease due to mobilization of workers is not taken into consideration. This explains the apparent discrepancies between this table and the second table on page 115.

PER CENT OF INCREASE OR DECREASE IN NUMBERS EMPLOYED IN SPECIFIED INDUSTRIAL GROUPS AT SPECIFIED PERIODS AS COMPARED WITH NORMAL NUMBERS EMPLOYED BEFORE THE WAR.

[In this table mobilized workers are not deducted in computing the per cent of increase or decrease as compared with normal.]

Industrial group.	Proportion of mobilized workers.	Per cent of increase (+) or decrease (−) as compared with normal number.					
		Aug., 1914.	Jan., 1915.	July, 1915.	Jan., 1916.	July, 1916.	Jan., 1917.
Food preparation	26	−23	− 8	+ 2	+ 5	+ 9	+10
Chemical	27	−29	− 5	+10	+23	+34	+44
Rubber, paper, cardboard	19	−48	−29	−19	−10	− 6	− 4
Printing and binding	24	−41	−34	−28	−26	−23	−20
Textiles	15	−56	−27	−14	− 7	− 6	− 3
Clothing, millinery, etc	6	−62	−41	−31	−22	−17	−16
Leather and hides	26	−32	− 5	+ 3	+ 9	+16	+16
Woodworking	30	−46	−31	−18	− 7	+ 2	+ 7
Metallurgy (base)	32	−34	− 6	+17	+48	+69	+90
Metallurgy (fine), precious stones	23	−62	−48	−37	−26	−17	−13
Building trades, etc	33	−47	−40	−30	−25	−21	−17
Porcelain, pottery, glass, etc	28	−51	−38	−32	−25	−22	−18
Storage and transportation	32	−18	− 3	+ 7	+15	+25	+28
Commerce	25	−23	−17	−11	− 8	− 4	− 4
Total	24	−41	−20	− 7	+ 6	+16	+22

The reports of the periodic investigations made by the departmental (district) labor exchanges show not only the number of persons unemployed at each period, but the importance of the needs for labor in agricultural, industrial, and commercial undertakings. The reports of two such investigations are available, covering May and November, 1916. The first of these reports[1] showed that 115,650

[1] France. Bulletin du Ministère du Travail et de la Prévoyance Sociale, September to November, 1916, p. 419 et seq.

persons were on the unemployment funds' lists; 92,228 were in the Department of the Seine, 71,814 of whom were females and 20,414 were males. Of the total of 92,228, 15,210 were refugees. A large number of unemployed persons were reported to be unable to perform labor because of sickness, old age, infirmities, etc. The investigation included only such unemployed persons as had made application for relief, and for this reason excluded unemployed persons who were members of families in receipt of soldiers' payments.

There was a demand reported by the various offices, exclusive of the Department of the Seine, for 303,887 laborers. Of these 199,375 were needed in agriculture, 21,969 in metallurgy, 10,324 in storage and transportation, and 9,002 in fishing.

It became more and more difficult to obtain male labor during the latter months of 1915. So great was the demand that the central labor exchange began a study as to the best measures to be adopted to secure the needed supply from the French colonies and from other countries. An interministerial committee was organized to secure united action by the interested ministers.

The first duty of this committee was the preparation of model contracts, for each colony and each foreign country from which laborers might be imported. In a general way these established the conditions of labor. The recruitment of laborers from Indo-China is under the supervision of the minister of war. In the other colonies and in foreign countries two kinds of contracts are used, one entered into between the State and each employee, and one between the State and the person proposing to employ a group of colonial recruits. Precise items covering wages, daily hours of labor, overtime, night work, rest days, lodging and feeding, and conditions to be observed in case of sickness or accident, form a part of the contracts. Colonial and foreign laborers are entitled to the benefits of the law on laborers' and citizens' retirement. The contracts are prepared more especially for employment of Algerian, North African, Chinese, Italian, Greek, and Portuguese laborers.

The minister of labor has secured from the more important railroads transportation of foreign and colonial laborers from the port of entry to their destination at half fare.

When a request for laborers is made by an employer the office makes an investigation to determine if the request is justified by local conditions as to labor supply and if the conditions of labor offered the laborers requested are as favorable as those under which native laborers of the same occupations in that locality or district work,

and if due provision has been made for lodging and provisioning laborers properly. From May 13 to November 1, 1916, request for reductions in fare was made in 101 instances, 74 of which related to 7,379 Italians, 26 to 3,261 Spaniards, and 1 to 100 Greeks. Italian laborers are recruited only through the Royal Emigration Commission of Italy. The central office has also directed to places of employment other laborers including Algerians, Annamites, Greeks, Chinese, etc., who have secured transportation in France under special military rules.

No data are available for determining the exact number of colonial and foreign laborers recruited, but it has been estimated on reliable information that on December 1, 1916, the number employed in industrial, commercial, and agricultural establishments, and more particularly in the establishments employed in manufacturing for the national defense was 191,700. Of these, 61,000 were colonials from Algeria, Tunis, Morocco, Indo-China, etc., and 130,700 were foreigners from Greece, Italy, Portugal, Spain, China, Serbia etc.

The second report from this source[1] says: "During the six months intervening between the two reports, unemployment which had already decreased materially became almost insignificant. The decrease is less noticeable in the Department of the Seine than in other districts. Nevertheless, if the number of incapacitated (old, infirm, and sick) persons is taken into consideration, it may be said that practically all persons physically able to work are employed."

The total number of laborers needed dropped from 303,887 in April, 1916, to 217,760 in November, 1916, a decrease of approximately one-third, caused chiefly by the great reduction (97,459 or 48.8 per cent) in the number needed for agriculture. Nevertheless the demand has increased in most of the industry groups. There was more demand for women in November than in April. The investigation showed clearly that, notwithstanding the importation of colonial and foreign laborers during the half year, the demand for laborers in the industries proper increased.

Still another source furnishes a base for estimating the labor conditions, especially in Paris. The National Unemployment Fund furnishes frequent reports as to its operation. This fund furnishes three kinds of unemployment relief: Usual unemployment benefits, aid to commune unemployment funds, and transportation expenses of foreign laborers unemployed by reason of the war and returning to their homes.

[1] France. Bulletin du Ministère du Travail et de la Prévoyance Sociale, January to March, 1917, p. 54 et seq.

The following table shows the number of persons in Paris to whom relief was accorded, by months, August to December, 1914:

PERSONS IN PARIS TO WHOM RELIEF WAS GIVEN BY NATIONAL UNEMPLOYMENT FUND, AUGUST TO DECEMBER, 1914.

[From Bulletin du Ministère du Travail et de la Prévoyance Sociale, Nos. 1 to 4, January–April, 1915, p. 24.]

Month.	Number assisted.	Males.	Females.
August	168,352	79,642	88,720
September	278,047	128,868	149,179
October	293,824	134,990	158,834
November	278,592	125,837	152,755
December	243,939	111,507	132,425

The following table is a summary of quarterly reports of the operation of this fund, December 28, 1914, to March 6, 1917.

NUMBER OF UNEMPLOYED PERSONS IN PARIS TO WHOM UNEMPLOYMENT BENEFITS WERE ACCORDED BY NATIONAL UNEMPLOYMENT FUND, DEC. 28, 1914, TO MAR. 6, 1917.

[Data compiled from Bulletins du Ministère du Travail et de la Prévoyance Sociale, July, 1915, to March, 1917.]

Period.	Average fortnightly number granted benefits.	Males.	Females.	Average amount of benefits granted each fortnight.
Dec. 28, 1914, to June 5, 1915	183,560	.....	.....	$616,625
June 6 to Aug. 8, 1915	120,397	.....	.....	415,455
Aug. 9 to Oct. 27, 1915	103,687	24,537	79,149	358,033
Oct. 28 to Dec. 30, 1915	91,292	16,463	74,828	310,583
Dec. 31, 1915, to Mar. 3, 1916	88,285	15,648	72,637	299,845
Mar. 4 to Apr. 20, 1916	81,453	14,326	67,126	279,312
Apr. 21 to June 7, 1916	71,191	12,545	58,646	243,644
June 8 to Aug. 26, 1916	58,824	10,409	48,415	201,241
Aug. 28 to Oct. 28, 1916	45,541	8,340	37,202	153,005
Oct. 29 to Dec. 31, 1916	38,395	6,108	32,287	129,500
Jan. 2 to Mar. 6, 1917	33,811	5,348	28,462	114,670

WOMEN'S WAGES IN MUNITION FACTORIES IN GREAT BRITAIN.

With the advance of the war, one of the most difficult problems confronting the British Government has been so to adjust wages of women and girls engaged on war work as to make them fair and equitable, not only to those who have themselves entered employments with which they are almost totally unfamiliar, but also to employers who have been forced by the exigencies of the situation to take on large numbers of female workers. In its attempt to regulate women's wages, the Government has of course been confined, so far as compulsion is concerned, to controlled establishments, and in these approximately 380,000 out of 400,000 women have benefited by wages adequate to maintain them in health and effciency, while to a very large proportion opportunity has been given to augment their earnings. When consideration is given to the diverse nature

of the trades, the absence of any data on which the department could work when it first took up the question of regulating women's wages, the absolute novelty of wage regulation by a Government department, the extreme urgency of the many difficulties which arose, the reluctant attitude of employers, and the interdependence of commercial work and munitions work, the department feels justified in claiming a very considerable adjustment in the matter of women's wages.

Under powers granted him by the Munitions of War (Amendment) Act, 1916, the Minister of Munitions has from time to time, by orders, given directions as to the rates of wages of female workers, but it was not until July, 1916, that Mr. Lloyd George, at that time Minister of Munitions, announced the policy of the Government in this connection:

> The Government will see that there is no sweated labor. For some time women will be unskilled and untrained; they can not quite turn out as much work as the men who have been at it for some time, so we can not give the full rate of wages. Whatever these wages are, they should be fair, and there should be a fixed minimum and we should not utilize the services of women in order to get cheaper labor.

This undertaking, it will be seen, related solely to the wages of women employed on munitions work, but it has been given much wider scope by interested parties and orders have been issued regulating the wages of women and girls employed on work not munitions work. Close consideration is being given to the conditions under which women or girls to whom orders have applied are now working. Particulars are being obtained from every controlled establishment which will show how the wages at present earned compare with those earned a year ago, and preparations are also on foot for an inquiry designed to see that evasions or breaches of the orders are reduced to a minimum. One urgent and difficult question, namely, the policy to be adopted with regard to the payment of women on skilled men's work, remains unsettled so far as this bureau is advised. This latter problem is one which, simple in appearance, really goes to the root of the maintenance in the engineering trade of the lines of demarcation in existence prior to the war and of the practicability of postwar restoration.

The principle upon which the wages orders relating to women and girls have been designed is that a standard rate should be fixed, variable only in special cases. This principle is entirely different from that traditionally governing men's wages, which vary from district to district. Experience, however, justifies its adoption. Comparatively few women are organized, and, therefore, advances in wages made by a compulsory order often come to them as an unexpected

boon. If the orders had fixed minimum rates there would have been a tendency for women to agitate that they should be increased on any and every pretext on the principle that, having got so much by no effort of their own, they should be able to double their emoluments by determined agitation. Moreover, many of the conditions under which women are employed on munitions work must necessarily be of a temporary nature and continue only for the war period. It is of advantage both to employers and employed to divide the work done by women into two broad classes, for which both parties know definitely the rate that will be paid. A standard rate differs from a minimum rate in that it is the rate which is ordinarily to be paid, and from a maximum rate in that it is not necessarily the highest rate to be paid in all cases. When it is remembered that this is the first attempt in the history of the country to regulate wages on any large scale it will be seen that no other principle than that of a standard rate could have been adopted in such circumstances as have been created by the present war, either from the point of view of administrative efficiency or industrial stability.

Having thus briefly outlined what the Government is doing for women and girls who are augmenting the work of men, or who are actually replacing men in munition factories, and thus in no small measure assisting in the prosecution of the war, it may not be out of place to note in some detail the history of this movement and show just to what extent and in what way wage regulation has been effected. In the first place, the orders covering women's wages may be classified as those pertaining to women on men's work, to girls on men's work, and to women and girls on work not men's work. As early as October, 1915, the Ministry of Munitions adopted recommendations contained in a circular[1] submitted by the central munitions labor supply committee, consisting of representatives of employers, men's and women's trade-unions, and the ministry, covering the payment of wages to women on men's work, the rates prescribed being a time rate of £1 ($4.87) a week and piecework rates the same as those paid to men. A special paragraph provided that women employed on work customarily done by fully skilled men should receive the time rates of the tradesmen whose work they undertook. The circular containing these recommendations was sent to all controlled establishments, but the department had at that time no statutory power to enforce them. National factories were instructed to adopt the provisions, and many, though not all, private firms put them into force.

In January, 1916, the men's trade-unions, at their meeting with the Prime Minister and the Minister of Munitions, made it a con-

[1] Circular L. 2.

dition of their assistance in promoting dilution that the recommendations of this circular (L. 2) should be made compulsory. This was accordingly done. When the circular was issued on February 28, 1916, its provisions applied to all establishments then controlled, with the exception of those engaged in the chemical trades and those in Ireland. It subsequently appeared that the minister had in law no power to apply the order to some of the establishments which actually received it. Under section 6 of the Munitions of War (Amendment) Act, 1916, the minister may give directions as to wages only in the case of establishments to which section 7 of the Munitions of War Act, 1915, has been applied by order. In February, 1916, section 7 had been applied only to establishments engaged wholly or mainly in engineering, shipbuilding, the production of arms, ammunition or explosives, or of substances required for the production thereof. The difficulties thus created were finally removed by the application of section 7 to all controlled establishments. In view, however, of the fact that the circular (L. 2) was designed primarily for the conditions prevailing in the engineering and allied industries, it has not been extended to such trades as chemicals, oil mills, seed crushers, asbestos and rubber workers, and optical and scientific instrument makers, nor was it applied to the woodworking trade, which has received special orders that will be mentioned hereafter.

Shortly after the issuance of the circular (L. 2) a special arbitration tribunal was appointed to deal with the question of women's wages,[1] its two functions being: (1) To act as an arbitration tribunal to which the Ministry of Labor may refer differences concerning women's wages reported under the Munitions of War Act, 1915; and, (2) to advise the minister on the exercise of his power to give directions regarding women's wages. The tribunal began to arbitrate on differences soon after its constitution and a number of awards were issued in March and April, 1916. These awards all dealt with the wages of women and girls employed on work not recognized as men's work. The general form of the awards was to give a guaranteed rate of 4½d. (9.1 cents) per hour to timeworkers of 18 years and over, and of 4d. (8.1 cents) per hour to piece and premium bonus workers of 18 years and over, both scales descending for girls by ½d. (1 cent) per hour for each year of age under 18.

As soon as the tribunal had gained some experience, the minister referred to it for advice as to whether he should give directions prescribing rates of wages, first for girls on men's work, and second for women and girls on work not recognized as men's work. On the first reference the tribunal recommended a scale beginning with

[1] Authorized by section 8 of the Munitions of War (Amendment) Act, 1916.

£1 ($4.87) prescribed in the circular heretofore noted (L. 2), and descending by 2s. (48.7 cents) for each year of age. The second reference, however, involved the consideration of extremely difficult and complicated questions, on which no reliable data existed. The two main difficulties were: (1) The very wide scope of the term "munitions work," and, (2) the fact that the minister's power to make orders compulsory is practically limited to controlled establishments.

Ultimately the tribunal recommended rates of wages which were a generalization of its previous awards and left it to the department to determine the trades to which the order should be applied. In July, 1916, the department issued an order[1] dealing with the wages of girls on men's work, and also an order[2] dealing with the wages of women and girls on work not recognized as men's work, both orders operative from July 17, 1916. The former was applied to the classes of establishments covered by Circular L. 2, noted above. The other order fixed a rate for pieceworkers and premium bonus workers, starting at 4d. (8.1 cents) per hour, payable to those 18 years of age and over, and descending by one-half penny (1 cent) for each year of age, those under 16 years receiving 2½d. (5.1 cents); and a rate for timeworkers of one-half penny (1 cent) higher than the rates applicable to pieceworkers. This order was applied to about 1,400 establishments engaged in the manufacture of armaments and ammunition, ordnance and explosives, shipbuilding, and the various branches of mechanical engineering. A few exceptions of establishments in the above trades were made on the ground of their being situated in rural districts. Certain of the features of this order, however, were objected to by organized women workers, and complaint was made of the omission of any clause providing for payment for overtime and night work and the fixing of piecework prices. It was objected that the rates were not minimum rates and it was alleged that the minister had promised that minimum rates would be fixed. It has, however, already been observed that the only undertaking given by the minister upon the subject of woman labor related to the wages of women on men's work. As a result of the representations made to the department, supplementary directions were issued on September 13, 1916,[3] providing for the payment of overtime and night work, and the fixing of piecework prices and premium bonus basis times in such a way as to enable a woman or girl of ordinary ability to earn at least 33⅓ per cent over her time rate, except in the case of an establishment where an application that this provision should be dispensed with, either

[1] Statutory Rules and Orders, No. 456, July 6, 1916.
[2] Statutory Rules and Orders, No. 447, July 6, 1916.
[3] Statutory Rules and Orders, No. 618.

generally or as regards any particular class of workpeople, has been approved by the Minister of Munitions.

As already indicated, Order No. 447, mentioned above, was not applied to all establishments. In October, 1916, those not included were notified[1] that the order would be applied to them unless within a short time they were able to show exceptional reasons to the contrary. A very large number of establishments made representations on the subject, which were classified and referred to the special arbitration tribunal, together with a reference asking for advice as to whether the order should be extended, with or without modification, to any of the trades concerned. On December 12 the tribunal recommended that the order, with certain modifications, should be applied to 13 additional trades, namely, electric and telegraphic engineering and the manufacture of electric and telegraphic accessories; wire rope and cables and hemp rope; tubes; iron and steel works; iron and brass foundries and lead and copper works; scientific and optical instruments; sundry explosives works; rubber; asbestos; chemicals; mica. The modifications proposed were (1) a new rate for girls under 15; (2) a series of probationary periods; (3) a reduction of the rates by one-fourth penny (one-half cent) or one-half penny (1 cent) per hour in certain rural areas; (4) that special rates should be fixed for women and girls employed in warehouses in cases where a prewar custom could be shown of differentiating between the wages in the warehouses and the wages in the workshops on account of the easier condition prevailing in the former. These modifications, except (3), were put into effect by Statutory Rules and Orders Nos. 9 and 10, issued in January, 1917, Order No. 9 establishing a rate of 2d. (4.1 cents) for pieceworkers and premium bonus workers under 15 years of age, and 2½d. (5.1 cents) for timeworkers under 15 years of age.[2]

On April 19, 1917, Order No. 9 had not been made applicable to the following trades: The bolt and nut and screw trade; tin-box trade; pottery, hollow ware, brick, and fire clay; paper-box trade and paper mills; soap; oil and seed crushers; glass works; emery works; aluminum works. At that time the matter of including the bolt, nut, and screw trade was under consideration, but so far as known, no determination has been reached. The tin-box trade, and the paper-box trade and paper mills are for the most part subject to the compulsory rates fixed by the trade boards, while in the soap trade very few, if any, women are employed on munitions work. In the oil and seed crushers women are for the most part doing men's work, while the three last-named trades are unimportant.

[1] By Circular L. 63.

[2] Order No. 10 applies to rural districts and differs from Order No. 9 only in the rates of wages, which are in each case ¼d. (½ cent) less.

In September, 1916, it became increasingly apparent, in view of the modifications in processes of manufacture resulting from the employment of women on men's work, and from the experience gained as to their capacity, that the provisions of the circular (L. 2) embodying the recommendations of the central munitions labor supply committee as to the payment of women on munitions work, to which reference is made on page 121, were too rigid. The circular did not admit of any rate between £1 ($4.87) a week and a fully skilled tradesmen's rate to women on time, and did not allow of variations in cases where women undertook work of a specially laborious nature or where the districts where they were employed were subject to exceptional local conditions. Accordingly the minister referred to the central munitions labor supply committee, as the authors of the original recommendations, for advice as to whether he should make any modifications in the order. That committee thereupon submitted certain other recommendations, which were transmitted to the special arbitration tribunal for its observations. The latter body was already considering a reference for advice as to whether modification should be made in the paragraph of the circular relating to women employed on skilled tradesmen's work. Recommendations accepted by both bodies eventually came to the minister and were embodied in a new order,[1] which, however, did not include that portion relating to women on skilled men's work, since further deliberation was deemed advisable.

The principal features of this order were the fixing of £1 ($4.87) as the lowest rate to be paid for a week's work of 48 hours or less, and an additional 6d. (12.2 cents) per hour up to 54 hours. For the purpose of overtime, the working week for women on men's work was not to be reckoned at less than 48 or more than 54 hours. Provision was also made for the payment of enhanced rates in the case of women employed on semiskilled men's work and work of specially laborious or responsible nature, or in special circumstances, but no specific rates of wages were prescribed for work of this description.

After further consideration, it was decided that the question of women employed on fully skilled men's work should be dealt with by adopting the provisions arranged by the dilution commissioners on the Clyde and on the Tyne in cases where women were employed on part only of the work customarily done by fully skilled men. From the date when Circular L. 2 was first issued the question of payment of women in these circumstances was bitterly disputed; the men's trade-unions claiming that the understanding was that women should receive the tradesmen's rate, however small a portion of his work they did; employers, on the other hand, maintaining that any such arrangement was wholly unreasonable. On the Clyde and on the

[1] Statutory Rules and Orders, No. 888, Jan. 1, 1917.

Tyne the question had been brought to what seemed a satisfactory solution by providing that women employed on part only of skilled men's work should serve a period of probation of three months before being paid his rate. At this juncture Order No. 49 [1] was issued, introducing a further modification in that it allowed an employer to deduct from the time rate of the women employed on skilled men's work an amount not exceeding 10 per cent to cover any extra cost that was incurred by the employment of women in place of men.

In the matter of women's wages considerable difficulty arose as to payment of those employed on woodwork processes in the manufacture of aircraft. The aircraft industry has extended enormously since the war began, and it was felt that to legislate for women's wages on the customs existing prior to the war might unduly hamper the development of the trade. Accordingly, the minister in September, 1916, referred to the tribunal for advice as to whether he should issue directions governing the wages of women and girls on woodwork. Ultimately, the tribunal recommended a series of rates, generally ½d. (1 cent) per hour higher than those established in Order No. 447, noted on page 123, and approximating those in Circular L. 2 (p. 121). Higher rates were fixed for women on machines, with the provision that no girl under 18 should be so employed. The tribunal's recommendations were accepted and issued as Order No. 621,[2] with effect from October 2, 1916.

During the early part of the year the tribunal had been considering a reference for advice as to what directions should be issued by the minister governing the wages of women and girls employed on munitions work consisting of woodwork processes other than woodwork for aircraft. The tribunal found it extremely difficult to draw up any order preserving to any appreciable extent the scheme existing in woodwork trades in the case of men, and ultimately recommended that an interim order should be issued, dealing concisely with the matter. It recommended that the interim order should prescribe minimum hourly earnings of the same amount as the time rate prescribed for women and girls employed on ordinary processes on time under Order No. 621 relating to the aircraft industry. The department accordingly prepared to issue an order,[3] but the general increase to be made effective from April 8th, noted hereafter, having been determined on before the order was issued, it was modified by the addition of the increase determined on in the case of Order No. 621, and was issued in that form. The order has been applied to approximately 300 establishments with effect from April 16, 1917.

[1] Statutory Rules and Orders, No. 49, Jan. 24, 1917.
[2] Statutory Rules and Orders, No. 621, Sept. 13, 1916.
[3] Statutory Rules and Orders, No. 313, Mar. 30, 1917.

The position, therefore, on April 1, 1917, was as follows: The wages of women and girls employed on men's work were regulated by Orders 49 and 456 in approximately 3,585 controlled establishments engaged in the following trades: Arms, ammunitions, and ordnance; mechanical, electrical, telegraphic and marine engineering; makers of electric and telegraphic accessories; machine tool manufacture; shipbuilding and repairing; iron and steel works; tube works; tin plate; lead and copper works; foundries; blast furnaces; wire and cable works; textile and printing machinery; motors and cycles; aircraft; constructional engineering; the manufacture of saws and files; cutlery; silver and electroplate.

Order No. 9 (or in a few instances Order No. 10) regulating the wages of women and girls employed on work not recognized as men's work had been applied to approximately 3,875 controlled establishments in the following trades: Arms, ammunitions, and ordnance; mechanical, electrical, telegraphic, and marine engineering; makers of electric and telegraphic accessories; machine tool manufacture; shipbuilding and repairing; iron and steel works; tube works; lead and copper works; foundries; blast furnaces; wire and cable works; textile and printing machinery; motors and cycles; aircraft; constructional engineering; the manufacture of saws and files; cutlery; silver and electroplate; chemicals; asbestos; rubber; optical and scientific instruments; explosive and filling factories; mica.

Order No. 621, regulating the wages of women and girls employed on woodwork for aircraft had been applied to approximately 90 establishments engaged in the aircraft trade.

In view of the national award increasing the wages of men in the engineering and shipbuilding industry by 5 shillings ($1.22) per week, which was to become effective on April 1, 1917, and of the increasing cost of living, the minister, in March of this year, referred to the arbitration tribunal for advice as to whether he should make any increase in the wages of women and girls under the various orders. Before the end of March the tribunal recommended that increases to the following effect should be made:

(1) In the case of women on men's work, 4 shillings [97.3 cents] in the basis rate payable under Order No. 49.

(2) In the case of girls on men's work, increases which would bring the wages of girls of 17 to 4 shillings [97.3 cents] less than the rates to which women on men's work were to be advanced, with a scale for girls under 17 descending by 2 shillings [48.7 cents] per week for each year of age.

(3) In the case of women and girls on work not recognized as men's work 1d. [2 cents] should be added to the rates prescribed for women of 18, and ½d. [1 cent] to those for girls of 17 when employed on time; and ¾d. [1.5 cents] should be added to the rate guaranteed for women of 18, and ¼d. [½ cent] to that guaranteed for girls of 17, when employed on piecework or premium bonus.

(4) In the case of women and girls employed on woodwork for aircraft the rate should be increased on the same principle as that adopted in the case of Order No. 9.

These recommendations were adopted and were announced to all controlled establishments by the department's Circular L. 85 directing controlled establishments to which the orders had already been applied to make the increases which had been determined on in their wages books as from April 8.

The above represents the history of the wages orders issued by the department. It can not be said that all the questions arising out of women's wages have been finally settled. For instance, there are certain trades, like the bolt and nut trade, the chemical trade, and oil mills, in which women are working under circumstances not covered by any orders. The number of women not so covered is, however, comparatively small, and, so far as the department is aware, there are not more than 6 or 8 per cent of women employed in controlled establishments who have not received the benefits of an order.

INDUSTRIAL EFFICIENCY AND FATIGUE IN BRITISH MUNITION FACTORIES.

The interim report prepared and published in February, 1916, by the British Health of Munition Workers Committee, entitled "Industrial Efficiency and Fatigue," which was summarized in the MONTHLY REVIEW for July, 1917 (pp. 14 to 19), has been made available in Bulletin 230, recently issued by the United States Bureau of Labor Statistics. This publication is the fourth of a group of bulletins being prepared by this bureau in compliance with the request of the Council of National Defense to edit and publish the complete reports of the committee appointed by the British Minister of Munitions to investigate conditions affecting the health and welfare of workers, so that the salient features thereof may be made applicable to conditions pertaining to the United States.

Briefly, the interim report embraces studies on the comparative efficiencies of day work and night work; the causes and conditions of lost time; incentives to work, with special reference to wages (including an appendix on wage systems); and medical studies touching the health and physical condition of men and women in munition factories.

The bulletin also includes a reprint of Memoranda Nos. 16 and 17, prepared by the Health of Munition Workers Committee, the former dealing with medical certificates for munition workers, giving a form of certificate in use, and the latter giving the results of an investi-

gation of the health and welfare of munition workers outside the factory. The last-named memorandum is noted more fully on pages 91 and 92 of this issue of the MONTHLY REVIEW.

THE REORGANIZATION OF INDUSTRY IN GREAT BRITAIN.

In July, 1916, there was held in Oxford, England, a three-days' conference to consider the reorganization of industry, commerce, and finance after the war, and the report of the proceedings,[1] in pamphlet form, has come to hand. The conference was convened by Ruskin College, whose resources are all used for educational work in the labor movement, "in the belief that the time had come for more definite thinking by the labor movement upon the problems which labor will have to face when peace comes, and in the hope that a full and frank discussion between recognized students of industrial questions and well-known representatives of labor might help toward the formulation of a national policy."

The delegates numbered 82 and represented 52 trade-unions, trades councils, cooperative societies, and labor or other organizations. The report includes the four papers which were read and an abstract of the discussions they aroused. It is stated that the college does not hold itself responsible for the opinions expressed, but only for the calling of the conference and the publishing of the report.

In the following pages the papers presented are briefly summarized. Their titles are:

"The disorganization of industry, commerce, and finance: The problems to be faced," by A. C. Pigou.

"How readjustment may be facilitated after the war," by Arthur Greenwood.

"The contribution of industry to revenue," by Sidney Webb.

"The control of industry after the war," by A. E. Zimmern.

Prof. Pigou sketches the transition which took place in British industries following the outbreak of war, describing the period of disorganization as very much shorter than people at first expected. "After a few weeks * * * employment had completely recovered from the shock." "In an extraordinarily short time the business and industrial community had changed front and altered its formation in conformity with the new conditions." "In a rough general way industry adapted itself to the state of war during the first few weeks, and it has remained adapted to that state, conforming immediately to all later developments, throughout the months that have followed."

[1] Council of Ruskin College, Oxford, England. The reorganization of industry. An account of proceedings at the conference of working-class associations held in Oxford on July 21 to 23, 1916. 3d ed. London, 1916. 85 pp.

There are, however, reasons for not building too much, in considering the probabilities regarding a return to peace, upon the analogy of what happened after the war broke out. "Obviously, unemployment and distress are likely to be more serious when a state of greater activity is giving place to a state of less activity than they are when the opposite kind of change is occurring," and it is probable that unemployment in men's industries will not be the brief and unimportant thing it was at the beginning of the war but will resemble the more serious and prolonged unemployment that occurred in women's industries.

It is plainly desirable that the utmost possible use be made of the existing system of labor exchanges, the speaker going so far as to advocate the passage of a law putting "some sort of compulsion" upon employers and employed to have recourse to these exchanges more generally than they do at present. Employers should be compelled to take on the hands they want through the exchanges, or—if taking men on directly—to notify the exchanges of each person employed. The workers might be induced to register at the exchanges by paying part of their war gratuity through such agency.

On the subject of wages the author discusses the volume of capital and the supply of labor. Other things being equal, any reduction in the amount of capital in a country injures the working classes by diminishing the real rate of wages—that is, the rate expressed in terms of the things wage earners want to buy—which they are able to earn. In Great Britain, however, no significant direct destruction of capital has occurred as yet, except in the case of ships, and even taking into consideration a certain amount of deterioration which has not been made good as it would have been under normal conditions, there is reason to believe that the net reduction has been very small.

The retention at its old level of the volume of capital enables the old real rate of wages to be kept up only provided the number of those who offer work for wages is not increased. The rate of expansion in England has been about 1 per cent per annum, but the war is checking, and will continue to check, this expansion. Taking into consideration all the various factors, it seems unlikely that the wage-earning population will be larger after the war than before. So far, therefore, there is no ground for supposing that the real rate of earnings obtainable will be lower.

This general forecast refers, as already stated, to real and not to money wages. What will happen to the latter depends largely on the policy of governments and banks in many countries in regard to currency problems. The author's prophecy, ventured on the tacit assumption that the return of peace is not indefinitely distant, is

that real wages will be about what they were before, and that money wages will stand at such level as proves necessary. Furthermore, the forecast refers to the average level of real wages and not to those actually paid in any particular trade. Some industries will experience a relative boom and some a relative depression, which will be reflected in their wage rates.

It is of extreme importance that widespread stoppages of work, which would greatly delay the restarting of the country's ordinary economic life, be prevented. One of the principal dangers is that of disputes between employers and employees about wages. Despite the various forms of machinery to which, no doubt, recourse will be had [1]—such as mediation, conciliation, and arbitration—it is improbable that settlement will be reached in all cases, and the speaker suggests that the prewar level of real wages be taken as a basis of discussion for the negotiators on the two sides. This does not mean that the settlement should necessarily embody such rate; special circumstances in particular industries will no doubt make departures therefrom appropriate. In the case of low-paid workers it would be quite compatible with his idea that the representatives of any particular class should say that before the war wages for such workers were too low.

It is clear that in so far as the large sums raised by taxation for interest on the war debt are taken from the working classes the economic position of these classes will be made correspondingly worse. It was out of the question for the wage earners to subscribe to the war loans in anything like the same proportion as the richer classes; consequently, the taxation of wage earners to pay interest on such loans is taxation by far the greatest amounts from which will be paid over not to them but to other people. "It is here that the vital issue of postwar finance lies."

Mr. Arthur Greenwood discusses the effects of the war on capital, management, and labor. As regards the first, the shortage of labor resulted in the improvement and the use of machinery being widely extended, new plants being laid down, and new buildings being erected. Management in its turn, previously "overstaffed and underworked," reorganized itself on a basis of great efficiency; it sought new forms of capital, developed the subdivision of labor, and rearranged processes and workshops.

Of labor, serious sacrifices were asked. Notwithstanding that workers had enlisted in hundreds of thousands, labor's contribution to production must be not only maintained but increased. It would be

[1] In answer to a question the speaker states as his view that before the end of the war the Government should pass an act like the Canadian Industrial Disputes Investigation Act, to refer to principal industries of national importance.

possible to enlarge the output by the existing supply of workers toiling harder and for longer hours, or by the dilution of labor through the employment of semiskilled workers for certain kinds of skilled work and of people who had not been employed or had already left industrial life.

But such changes could not be made without the cooperation of labor, and appeal was made to the trade-unions to give up their most cherished achievements. Accordingly, trade-union regulations were set aside, the right to strike was sacrificed over a large part of industry, compulsory arbitration was accepted, and industry came to be conducted on the basis of the agreement between the trade-unions and the Government, together with the legislation dealing with the munition industries.

On their part, the trade-unions desired certain safeguards. It was agreed, therefore, that the changes made should not prejudice wage rates; that due notice should be given of further alterations in working conditions; that priority of employment after the war should be given to the workmen affected by the change; and, most important of all, that after the war there should be in every case the restoration of previous conditions.

With regard to the last provision the author points out that the economic system, under the pressure of war, has increased its efficiency of production over a fairly large range of industries and an enormous number of people have increased their industrial experience and efficiency.

"Women transport workers, clerks and shop assistants, and semiskilled men and women have widened their experience during the war, and a large number have gained facility in the handling of machines. All these people will remain as a body of workers more efficient and more experienced than they were before the war. Knowledge of up-to-date and more efficient methods will be more widely spread. The experience which employers have gained during the war regarding the possible productivity of labor, the value of further specialization of labor, and the economy of machinery will not be blotted out from their memories when the war comes to an end. Rather, will there be a strong desire to make the industrial system a more efficient instrument of production than it has been in the past—a desire which will be strongly reenforced by the cry of foreign competition and by the fight for world trade. But even if the pressure of circumstances were not immediately overwhelming, war-time developments will sooner or later become a guide to industrial organization." Only by act of Parliament, rendering illegal for a term of years the practices which have come into operation

during the war, could the changes which have been made be rendered null, and such a law would not be practicable.

The future of industry will be determined in some degree by the economic arrangements made among the Powers. An economic boycott of the Central Powers is not likely to be in the best interests of industrial reconstruction. The author suggests instead, international cooperation, through an international economic commission, parallel with the Peace Congress and as widely representative, charged with formulating a policy "for facilitating the restoration of international economic relations, and the reconstruction of the world's economic system." He suggests further that it would be a great gain if this body were given a permanent existence.

Industrial reconstruction must not be confined to emergency measures to the neglect of ultimate questions. "During the period immediately following the war the industrial system will set itself in new grooves which will determine its future lines of development." To allow it "to set itself in a new mold and to limit industrial reconstruction to minimizing hardship and generally softening the shock of reversion to a peace footing would be an act of folly, for the new developments might soon prove to be disadvantageous to the national welfare." It is not to be expected that after the war the industrial oligarchy will be converted into a democracy, but "a twist may be given to industrial development which will prepare the way for a further participation by labor in the responsibility and conduct of the nation's industrial life."

The principle of the recognition of trade-unions by the State has been conceded during the war. "Trade-unionism has much to contribute to the working out of reconstruction, and its contribution could best be made through some form of national labor council, representative of the whole trade-union movement and responsible for expressing to the Government the considered policy of the movement and for negotiating with it concerning trade-union and labor questions."

Next, the Government should "call upon the employers' federations and the trade-unions in each industry to meet for the purpose of coming to a decision on matters affecting the industry. It would be necessary and advisable to hold similar district conferences in each industry, where more detailed consideration could be given to special local problems. The conferences, both national and district, should be called during the war, and should continue to sit at regular intervals throughout the whole of the transition period after the war. The conclusions arrived at in each industry with regard to reconstruction should be accepted by the Government and enforced by it upon the whole industry. Unfortunately, the Board

of Trade has already appointed committees to deal with the position of certain trades after the war. These committees, however, are not equally representative of labor and employers. This is a bad precedent, which assumes that the state of the different trades after the war is a matter of no consequence to the workers. But if there is to be anything approaching satisfactory reconstruction, it can only be by the organized workers of this country being taken into full consultation on equal terms with the employers. Hence the importance of national joint conferences of each industry."

The Board of Trade should become what its name implies—the central department of state dealing with business and commerce; the industrial council should be reorganized in connection with the Ministry of Labor, and should decide on policies, based on the findings of the national conferences of the various industries, to be put into operation by such ministry.

On the subject of demobilization the author has much to say. He considers it "primarily an industrial and social question, and only in a minor degree a military question." Industrial and social considerations should govern the situation, and the army should be disbanded as far as possible according to the needs of industry instead of by military units; that is to say, "that workers in the army for whose services there is an assured need should be liberated first, and that soldiers for whom there may be some difficulty in obtaining suitable employment should, provided they offer no objection, be retained in the Army until industrial outlets can be obtained for them. Where, after inquiry, it is found that soldiers have situations awaiting them, military regulations should not stand in the way of early discharge. In other words, just as the industrial population owing to the war was considered as a military reserve, so after the war the armies should be considered as an industrial reserve."

With regard to the dangerous possibility of the employment of partially disabled soldiers as cheap labor to the detriment of able-bodied workmen, it is suggested that such competition can be minimized by the adoption of a legal minimum wage for partially disabled soldiers equal to the prevailing rates on the work on which they are employed. Those who are able to follow their previous employment should be paid the prevailing rate or, where disablement makes them below the standard of efficiency, a lower rate agreed upon with the approval of the trade-union and perhaps supplemented by an increase in pension equivalent to the diminution in wages.

As many people will find themselves temporarily out of work there is suggested the extension of the National Insurance Act to

cover unemployment in all trades engaged in the making of munitions and in other forms of war work.[1]

The trade-union movement must be prepared to accept the labor exchanges as the machinery for reestablishing normal industrial life. For various reasons these agencies are unpopular among the workers, but it should be possible so to modify them as to gain the confidence of the trade-unions. An agreement might be reached by the unions' formulating and presenting to the Government a policy with regard to the working of the labor exchanges in return for which the unions would undertake to support them. Furthermore, a policy should be adopted with regard to their use during demobilization, including the establishment of local committees composed equally of workers' representatives and representatives of employers to supervise their administration.

The fact of women in industry must be accepted, and efficiency will be the test of their employment. As far as the trade-union movement is concerned, "it would be disastrous if the women, for lack of sympathy, were driven to enroll in trade-unions of their own," and the unions would be wise to assist their organization and to insist upon equality of rates of payment—not necessarily equal wages, but wages proportionate to efficiency. "The general policy of the trade-unions toward the employment of women should not be one of exclusion, but one of acceptance on terms and conditions which will prevent the female workers from becoming a danger to the working-class standard of life."

The continuance in industry of youths who have entered during the war must be given thought by the industrial conferences suggested. Those under 18 years of age should be required to attend part-time continuation schools. Apprentices whose training was interrupted should be able to continue it, not for a fixed time, but until they reach a standard agreed upon by employer and trade union.

In the case of unorganized labor, of which the great majority of women and children are a part, the chief protecting agency must be the State.[2] Legislation already in need of revision has been entirely

[1] By the National Insurance (Part II) (munition workers) Act, 1916, which went into force Sept. 4, 1916, the compulsory scheme of unemployment insurance was extended to all workpeople engaged in munition work except certain classes excluded by the board of trade under power conferred by the act. It is to continue in operation as regards payment of contributions for such period as the board of trade may determine, not being more than five years from its going into operation or three years after the end of the war, whichever is the longer period. The right of the workman to receive benefits is to continue for a further six months or such longer period as the board may fix.—Board of Trade Labor Gazette, Great Britain, July and September, 1916.

[2] In reply to a later question Mr. Greenwood stated that unorganized labor "should be dealt with in the same way as unorganized employers. The organized bodies on each side should come to an agreement, and then the Government should say, if this is good enough for you we will apply it to the whole industry, organized and unorganized. The trade-unions are more capable of expressing the needs of the workers than anyone else."

set aside, and new conditions require laws to meet them. "If the industrial system is to be reestablished on lines at once less demoralizing and more efficient, there is a good case for a general codification of our labor laws, for the wider application of measures which have proved valuable in a more limited field, and for a general leveling up of the conditions of industrial life. Without entering on this very large subject in any detail, one may suggest that hours of labor should be reduced as far as practicable to eight per day, that factories and other work places should conform to very much higher standards regarding lighting, ventilation, cleanliness, accommodation for meals, etc., and that trade boards should be extended to all low-paid industries."

The influence of organized labor in the industrial reconstruction will depend on the strength and unity of the trade-union movement and upon its adoption of "a clearly conceived and comprehensive policy based upon principle rather than expediency, but capable of immediate practical application." In the first place there is need of more and more amalgamation, and then of federation of larger bodies. Narrower interests must give place to the interests of labor as a whole. The potential strength of the movement can never be realized as long as it consists of a thousand unions.

"But consolidation is not sufficient; the trade-union movement can not make its contribution to national reconstruction unless it thinks out its position, its policy, and its practical proposals beforehand. With a grave duty to the nation before it, and a great opportunity within its grasp, the trade-union movement may take a considerable step toward liberating the industrial system from the worst of its vices and imperfections and establishing it upon the principles of justice and freedom."

Mr. Sidney Webb disclaims the title given to his address, and talks instead on "How to pay for the war." He states that before the war the nation was saving at the rate of four or five hundred millions a year, producing to that extent more than it actually consumed. After the war the national debt will be something like £4,000,000,000 ($19,466,000,000), imposing, at 5 per cent, a charge of £200,000,000 ($973,300,000) a year in additional taxation.

Before the war the income of the country was supposed to be something like £2,400,000,000 ($11,679,600,000) a year, and £200,000,000 ($973,300,000) could be added to that sum by everyone increasing his productivity by 10 per cent.

The war has shown that the aggregate productivity can easily be increased by 10 per cent or a good deal more.

It must be insisted that the land be used to produce the maximum amount of food instead of the maximum interest on capital and the

maximum rent for the farmer and the landlord. More brains must be put into industry, "to discover how to prevent waste and loss, to find how to do an operation in half the time and with half the effort—how to save half the capital." The country has something like 15,000,000 manual working wage-earners, and everything depends on their health and strength and training as to how effective they will be in industry. The prevention of waste in infant and child life; the adequate education of boys and girls, instead of their being turned out "clumsy, stupid louts who have not had their intelligence awakened." By these and other measures there would be no great difficulty in increasing the production of the country by a great deal more than 10 per cent.

The author further suggests extension of the cooperative movement and the nationalization of great industries. "It is often imagined that if we nationalize railways we are going to clear out the experienced men and put in people like myself. Of course, what you get rid of by nationalization is not the general manager, but only the shareholders. For the board of directors you might substitute an advisory board, but the railway system would be managed by the same sort of experienced people who managed it before."

On the subject, "The control of industry after the war," Mr. A. E. Zimmern states that the distinction between the trades and the professions arises out of "the part which those concerned feel that they are playing, rather than out of their real social function. And this self-respect, or absence of self-respect, is bound up with the question of professional organization and control of conditions under which the work is done."

The industrial organization is an autocracy, but not an untempered one. It may be described as autocracy modified by trade-union criticism and interference and by parliamentary and administrative control. In opposition to the theory of scientific management, the policy must be "not to make output mechanically perfect by turning the workman himself into a mere machine, but to make our organization scientific in the widest sense by the voluntary and harmonious cooperation of all the human factors concerned. It is along this road, and no other, that we shall reach the industrial democracy of the future."

Democratic control, in the present stage, does not involve a demand for control over the commercial side of management—the buying of raw material, the selling of the finished product, "and all the exercises of trained judgment and experience that are brought to bear by business men on these questions. * * * At present, at any rate, the workers' demand for democratic control is not a demand for a voice in the business, but for control over the conditions under

which their own daily work is done. It is a demand for control over one side, but that the most important side, because it is the human side of the industrial process."

It is clear, says the author, that not all British industries are ripe for changes in the direction of democratic control. Broadly, there are several conditions which an industry should satisfy for such an experiment to have a good chance of success. It should be a nationalized industry, that is, recognized to be a public service and a permanent part of the national life; it should be an industry where the amount of labor employed is relatively large compared with the fixed capital invested, prosperity depending, therefore, principally on the workers' efficiency; where the workers are highly skilled, and have a high standard of education and intelligence and a high general level of character; and where trade-unionism is well organized, as regards both numbers and spirit, is recognized by the employing authority, and presents no serious demarcation difficulties among the various unions concerned.

The author concludes by outlining a plan of joint administration for the manipulative staff of the post office department, employing about 230,000 persons. The object of the reforms suggested "is not to revolutionize the organization of the postal service or to turn the department upside down; it is to take the existing organization as it stands and to make the least possible change compatible with granting to the staff that measure of responsibility which is increasingly felt to be necessary in order to secure the efficiency and harmony of the service."

In the discussion following Mr. Zimmern's paper, Mr. W. Straker, of the Northumberland Miners' Association, emphasized the need of education to fit the workers for the higher and better life desired for them. During the conference much had been said about the necessity of greater power being in the hands of trade-unions. "Power implies responsibility, and to discharge responsibility intelligently implies education. * * * Every trade-union leader knows that the ignorance and petty jealousy of his members is his despair. There can be no progress in the labor or the trade-union movements without a greater knowledge and a better education."

APPOINTMENT OF INDUSTRIAL COMMISSIONS IN GREAT BRITAIN.[1]

The appointment of eight industrial commissions to inquire into the causes of labor unrest in Great Britain has been secured by Mr. Lloyd George, the Prime Minister. The chief purpose of these

[1] The Economist, London, June 9, 1917, pp. 1062, 1063. The New Statesman, London, June 16, 1917, p. 243. The Annalist, New York, July 2, 1917, p. 9.

commissions is to restore the touch which has been lost between the Government departments and the executives of the big trade-unions on the one hand and the workers in the shops on the other.

Each commission confines its activities to a designated section of the country and is made up of a chairman, who is selected for his detachment and impartiality, one employers' representative, and one employees' representative. The inquiries will be held in private in the belief that such a course will encourage expedition and will induce those appearing before them to speak with greater freedom.

The Prime Minister expected the commissioners to report by the first week of July, and in addressing them he suggested, among the problems with which they should deal, the following: The Munitions Act and the method of its administration, profiteering, high prices, trade-union regulations, complaints of the action of employers or foremen, compulsory recruiting and substitution, hours of labor, over-fatigue, overtime, the intervention of women in industry, and the incitements of agitators. The whole "labor question" is thus opened up, embracing the entire range of the relations between employers and employed, on which royal commissions have spent years of investigation, and on which a committee under the deputy speaker has already been sitting for half a year.[1]

WAR BONUSES FOR GOVERNMENT EMPLOYEES IN GREAT BRITAIN.

The position of employees on fixed salaries in times when industrial or other conditions lead to increase of the cost of living is notably different from that of the employee whose services command an increased wage on account of the prevalent conditions. The effect of war conditions in Great Britain had so far developed in March, 1915, that the organizations of Government employees in the national post office and telegraph service at that time preferred a request for a special addition to the wages of lower paid post office servants. The matter was referred to Sir James Woodhouse, Railway Commissioner, who awarded a bonus of 3s. ($0.73) per week

[1] Since the above was written the following news note, dated London, July 23, 1917, has appeared in the newspapers:

Eight commissions appointed by Premier Lloyd George in June to investigate industrial unrest in the country have just presented reports which agree in the main fact that the principal cause of unrest is the increased cost of living, so disproportionate to the advance in wages, and unequal distribution of food supplies.

Next in point of importance they put the administration of munitions of war and military facts, which resulted in restrictions on personal freedom, and lack of confidence in the Government on the question of carrying out its promises to restore trade-union customs.

The commissions make a number of recommendations, one that the Government should to some extent bear the increased cost of food, and another that "labor should take part in the affairs of the community as partners rather than as servants."

to male employees 18 years of age or over whose pay did not exceed 40s. ($9.73) per week; and a bonus of 2s. ($0.49) to those whose wages were above 40s. ($9.73) and not in excess of 60s. ($14.60) weekly. For females within the same wage limits the increases were 1s. 6d. ($0.37) and 1s. ($0.24), respectively.

Part time employees received pro rata increases; while sub-postmasters receiving scale payments were to have 7½ per cent of their gross emolument added if this did not exceed £144 ($700.78) per year, or a fixed bonus of 2s. ($0.49) per week if the income exceeded this amount and was not above £169 10s. ($824.87). All increases were to date from March 1, 1915.

With the continued rise of the prices of the necessaries of life a second demand was made in 1916, certain increases being allowed as set forth in a circular of the Lords Commissioners of His Majesty's Treasury, No. 23599/16, dated September 9, 1916. The particulars of this increase are not available to this office at the present time. The increases allowed, however, were, like those under the award of Sir James Woodhouse, emergency increases, but were of broader application, reaching other classes of Government employees.

A third appeal was made in 1917 by the post office employees, six classes being represented by organizations or representatives as follows:

The National Joint Committee of Postal and Telegraph Associations.

The Provisional (War Bonus) Committee of Post Office Classes, Major Establishment.

The Joint Committee of Post Office Supervising Officers.

Representatives of Unestablished Draughtsmen in the Engineer-in-Chief's Office of the General Post Office, London.

Representatives of certain officers borne on the Irish Establishment of the General Post Office in Dublin.

The matters submitted by these representatives were considered by a "Conciliation and Arbitration Board for Government Employees." This board reached the conclusion, under date of May, 1917,[1] that the continual increase in the cost of living resulting from the war warranted "a temporary increase of remuneration by way of war bonus." This was to be over and above any temporary increases granted under the two prior awards noted above. The bonus granted affected all classes of the service represented by the associations named, but was restricted to employees 18 years of age or upwards other than temporary employees, engaged on clerical or manual duties, and employed full time. Employees whose ordinary

[1] Conciliation and Arbitration Board for Government Employees. Award No. 1. London, May 1, 1917. 2 pp. Price, 1d.

remuneration did not exceed 30s. ($7.30) per week were allowed an additional sum of 5s. ($1.22) weekly to men and 4s. ($0.97) to women. Those whose remuneration exceeded 30s. ($7.30) but did not exceed 60s. ($14.60) per week were allowed 4s. ($0.97), if males and 3s. ($0.73) if females. Above 60s. ($14.60) weekly but not above £250 ($1,216.63) per annum, the benefits were 5s. ($1.22) per week for men and 3s. 6d. ($0.85) per week for women.

Persons whose ordinary remuneration would take them out of the classes receiving a war bonus, but who would for this reason receive less than they would have received if they had come within the classes receiving such bonuses, are to be granted such amounts as will make up the difference. The increases granted under this award are not to be in addition to increases granted by the Postmaster General since the beginning of the year 1917; and subsequent increases operating to take the employee outside of the classes benefited by the award shall either terminate or cause suitable variation in the amount of the war bonus from the date of such increase.

Subpostmasters and subpostmistresses who are paid by scale receive a bonus of 10 per cent of their gross annual payments where these do not exceed £104 ($506.12) per year; a bonus of 4s. ($0.97) a week is paid to those whose gross annual payments exceed the above amount but do not exceed £169 10s. ($824.87) per year, while those receiving in excess of the last-named sum but not more than £250 ($1,216.63) receive a bonus of 5s. ($1.22) a week.

Temporary employees and persons under 18 years of age are to be cared for by a separate award; and this award does not apply to men employed in the engineering and store department of the post office under trade conditions or to women employed in the factories and depots of the post office, their remuneration following the decision of the local industrial tribunals operative in the district.

The award of this commission, though given on the 1st of May, was to have effect as of January 1, 1917.

The same commission had before it requests of other Government employees—the Civil Service Federation, the Civil Service Clerical Alliance, and the Customs and Excise Officers' Association—these bodies also asking for increase of remuneration owing to war conditions. Some or all of these classes of employees were apparently affected by the circular of the Lords Commissioners of the Treasury of September 9, 1916, already mentioned, and the increases allowed at this time were in addition thereto. The Conciliation and Arbitration Board took their case under advisement and made for the corresponding wage groups awards identical to those granted in the case of post-office employees.[1] This award, made May 7, 1917, likewise

[1] Conciliation and arbitration board for Government employees. Award No. 2. London, May 7, 1917. 2 pp. Price, 1d.

dated from January 1, 1917. No limits are set for the termination of any of these awards, but presumably they are for the period of the war.

EVIDENCE AS USED BY SOCIAL INVESTIGATORS.

What constitutes good evidence? Every investigation, whether made by social workers, medical foundations, private societies for research, or Government agents, deals with evidence. Every investigator is busy collecting evidence and basing conclusions thereon, but what guide has he as to the comparative value of different kinds of testimony? Very clearly the rules governing the admissibility of evidence in court trials can not be applied to the ordinary investigation. Are any other tests available?

For social workers, Miss Mary E. Richmond, director of the charity organization department of the Russell Sage Foundation, endeavors to supply this need in a recent volume.[1] It is written primarily for case workers, i. e., workers with individual persons or families who for some reason need a helping hand from outside their own circle, and a considerable part of the book is useful only to such. The discussion of evidence, however, its nature, the difference between what constitutes good court evidence and evidence which the investigator may safely accept, and the relative weight to be attached to different kinds of evidence is of interest to all who deal with investigations of whatever nature.

Evidence, of course, is worthless unless it is reliable, and the author has some deserved words of censure for those who apparently "value every statement equally and then add the items together to form a total." Too few workers, she thinks, have grasped the fundamental fact that they are as responsible for accepting only valid testimony as for drawing sound conclusions from it when accepted.

While all evidence must be reliable, the author discriminates between the tests of reliability needed in court proceedings and the wider and more flexible tests permissible when investigations are made by trained agents.

> The reliability of the evidence * * * should be no less rigidly scrutinized than is that of legal evidence by the opposing counsel. On the other hand, the question of admissibility, the rules for which were framed mainly to meet the average juryman's lack of skill in testing evidence, does not enter into the weighing of facts as gathered by an agency all in whose service are, or can be, trained to this special task. Skill in testing evidence, as leading to such proof as social workers need, is in no way dependent upon a knowledge of the legal rules of admissibility. Social evidence, like that sought by the scientist or historian, includes all items which, however trifling or apparently

[1] Social Diagnosis, by Mary E. Richmond. New York, Russell Sage Foundation, 1917.

irrelevant when regarded as isolated facts, may, when taken together, throw light upon the question at issue. * * * Social evidence, then, has an advantage over legal evidence in that it can include facts of slight probative value.

The author treats evidence under three heads—real, testimonial, and circumstantial evidence. Real evidence—that is, facts which the investigator sees for himself—needs little discussion. Testimonial evidence—the assertions of human beings whether oral or documentary—is discussed at some length. Stress is laid on the necessity of knowing whether the witness is a first-hand observer or is quoting what he has heard at second or third hand, how reliable he is in general, and whether he has any bias in the present matter.

The two factors which condition the value of a witness' testimony are his competence and his bias. Competence includes both the witness' opportunity to know the facts and the way in which he has used this opportunity. Bias includes those ideas and emotions of the witness which may prejudice his judgment.

Of the two factors mentioned here, probably competence is the one which investigators are most likely to overlook. If a witness has had an opportunitly to know the facts, too little inquiry is made as to how he used that opportunity and how competent he is to give a reliable account of what he saw or heard. Bias is more easily allowed for and even has a value of its own. Every investigator who has tried to get at the facts underlying a strike or lockout knows how the prejudiced testimony of one side throws light on the prejudiced evidence of the other, and of the caution with which any statement must be handled which has behind it strong partisan feeling.

Circumstantial evidence is evidence to a fact which, if proved, tends to establish the point at issue. As an illustration, the author supposes that the point to be determined is whether or not a man feels affection for his family—"a question which is of practical importance sometimes in case decisions." The wife perhaps testifies that he does not care for her or their children. This is testimonial evidence, and needs testing only as to her competence and possible bias.

When, however, she names certain cumulative circumstances from which might be inferred the state of the man's affections; when she says that he gives her $6 a week out of $22, that he spends over half his leisure time away from home, that he is irritable when he does appear there, etc., these statements, which would be direct testimony as to his habits are only indirect testimony as to his indifference. * * * Note in the foregoing the cumulative effect of adding item to item of indirect evidence, each a comparatively weak basis of inference in itself, but gaining in cogency with every circumstance added.

It is in the use of indirect or circumstantial evidence that investigations may differ most widely from court procedure. Social

workers may fairly and reasonably take cognizance of the cumulative effect of many small items of evidence, each one of which by itself might be inadmissible under the strict rules of court testimony. This in turn throws on the worker the responsibility of examining each item carefully for evidence of carelessness, incompetence, or bias on the part of the witness.

The comparative value of each of these three forms of evidence, the risks involved in handling them, and the mental predispositions against which the worker must be on his guard when dealing with them are discussed somewhat fully, this discussion occupying about one-fourth of the book. The remainder deals with the application of these principles to the peculiar problems of case workers. There is much in this part of discussion of interest to the more general worker, but little of direct value.

THIRD ANNUAL MEETING OF THE INTERNATIONAL ASSOCIATION OF INDUSTRIAL ACCIDENT BOARDS AND COMMISSIONS.

The beneficial effects upon both employers and employees resulting from the practical operation of workmen's compensation laws in the various States have become so generally recognized that there is little likelihood of a return to the old method of employers' liability, with the attendant costly litigation, its delays and disappointments, and the bad feeling thereby engendered. Thirty-seven States, the Territories of Alaska and Hawaii, and the Federal Government now have workmen's compensation laws. As might be expected, there is a lack of uniformity in the legislation, and it was thought desirable by some of those charged with the duty of administering these laws that an organization should be formed for the purpose of bringing together administrative officials to discuss the interpretation of the laws and the puzzling problems of administration and to adopt, so far as possible, uniform practices and statistics. Accordingly, on April 14 and 15, 1914, representatives from several newly created industrial accident boards and commissions met at Lansing, Mich., and formed the National Association of Industrial Accident Boards and Commissions.

As a means of carrying out the purposes of this association, three conferences have since been held. The first, a special meeting, was held in Chicago January 12 and 13, 1915. This meeting was devoted largely to a discussion of standardization of accident statistics.

At the second annual meeting, held in Seattle, Wash., September 30 to October 2, 1915, the Province of Ontario, Canada, was received

as a member, and the title of the association was changed to the International Association of Industrial Accident Boards and Commissions. The most important action taken at this second annual meeting was the adoption of the tentative report of the committee on statistics and compensation insurance cost and the continuance of this committee.

The third annual meeting was held at Columbus, Ohio, April 25 to 28, 1916. The proceedings of this meeting are published in full in Bulletin 210, just issued by the Bureau of Labor Statistics of the United States Department of Labor. Among the resolutions adopted by the association at this meeting was one requesting the Bureau of Labor Statistics to publish from time to time the proceedings of the conventions and conferences of the association. Another most important action at the Columbus meeting was the election of the United States Commissioner of Labor Statistics as secretary-treasurer of the association.

At this conference addresses of timely interest were made covering such subjects as the conflicts between Federal and State jurisdictions in commerce cases, merit rating in workmen's compensation insurance, the why and how of uniform industrial accident statistics for the United States, the use of accident statistics for accident prevention, educational work in accident prevention, the theory and practice of compensation, a comparison of the methods of dealing with permanent partial disability cases, Ohio's experience with State insurance, the relation of workmen's compensation to old age, health, and unemployment insurance. As a part of the meeting the first sessions of the newly organized medical section were held, and a safety committee was organized to form the nucleus of a proposed safety section, later indorsed by the association, to advance the promotion of accident prevention.

Boston was selected as the place for the next convention, to be held during the third week in August, 1917.

REPORT OF THE ILLINOIS PENSION LAWS COMMISSION.

The Forty-ninth General Assembly of the State of Illinois, in January, 1916, created the Illinois Pension Laws Commission and placed upon it the responsibility of investigating the operation of all the State pension laws, to ascertain the present and probable future cost of maintaining the funds created by those laws, and to collect all available information in regard to the operation of similar laws in other States and countries. The report of the commission has been

issued in two parts embraced in one volume.[1] Part I is entitled Investigations with certain comparative studies, and presents the history of pensions for public employees in other countries, reviews in detail the pension laws of Illinois, recites the terms of the leading pension laws of other States in this country, sets forth the results of a comprehensive actuarial investigation of the five chief public pension funds in Illinois, and gives important statistics concerning other pension funds and the extent of present and possible future pension legislation for public-service employees in the State. Part II outlines briefly the scope and main features of the pension problem, states the essential principles and provisions which, in the opinion of the commission, should constitute a normal or standard pension plan, and makes specific recommendations regarding changes that should be made in some of the existing pension acts pending further investigation and study of the pension problem.

Information as to the operation of the pension laws was obtained in Chicago personally by the commission and in all the other cities, towns, and villages having a population of 5,000 or more from the mayors thereof, who, however, in some instances did not furnish detailed reports as to the present cost, so that the investigation in this particular, outside of Chicago, does not appear to have been complete. Data as to future costs, it is stated, were somewhat more difficult to obtain, since many considerations which can not be positively known enter into the calculation. The commission found 15 pension acts on the statute books on January 1, 1916. One of these, however, does not involve the expenditure of public funds, one was not put into effect, and a third was declared invalid. No summary statement of the operation of the remaining 12 is given in the report, but the following table has been compiled to show the number of employees affected, the number of pensioners, the amount paid to pensioners, and the estimated future cost of maintaining the five chief public pension funds existing on January 1, 1916:

[1] Report of the Illinois Pension Laws Commission, 1916. Springfield, 1917. 310 pp.

STATEMENT OF THE OPERATION OF FIVE PENSION FUNDS IN ILLINOIS, SHOWING THE NUMBER OF EMPLOYEES AFFECTED, THE NUMBER OF PENSIONERS ON JAN. 1, 1916, THE AMOUNTS RECEIVED AND DISBURSED DURING 1915, AND ESTIMATED FUTURE PAYMENTS.

Pension fund.	Number of employees, Jan. 1, 1916.	Amount received for pension purposes, 1915.	Number of pensioners, Jan. 1, 1916.	Amount paid to pensioners in 1915.	Estimated future payments.				Per cent of pay roll represented by ultimate normal load.[1]
					No additions to the force.		If full force is maintained.		
					Yrs.	Amount.	Yrs.	Amount.	
Police fund of Chicago	4,830	[2]$700,289.02	1,257	$770,365.42	77	$73,091,631	77	$160,253,937	34.3
Fireman's fund of Chicago	1,973	226,196.00	702	339,911.00	81	33,416,548	81	79,710,432	36.6
Teachers' fund of Chicago	7,754	[3]379,320.31	544	191,716.91	81	27,925,940	81	85,175,181	7.1
Municipal employees, fund of Chicago	5,604	[4]157,939.87	([5])	([5])	.....	.....	.....	.....	.....
Illinois State teachers' retirement fund	[6]26,000	[7]342,206.80	[8]339	[9]26,294.59	.....	.....	.....	.....	7 to 12

[1] "After a system becomes such that the number of employees remains constant, new entrants coming in only to fill vacancies caused by withdrawals and deaths, then there will come a time when pension payments will be the same from year to year. When this time comes, the system is said to be carrying its ultimate normal load."

[2] Of this amount, $117,209.35 was contributed by employees.

[3] Of this amount, $129,875.55 was deducted from teachers' salaries.

[4] Of this amount, $134,127.22 was received from employees.

[5] No pension payable until the expiration of 5 years from July 1, 1911.

[6] Estimated; outside of Chicago and Peoria.

[7] During the period Dec. 30, 1915, to Sept. 30, 1916. This amount includes $198,014.20 received from teachers, which, in turn, includes $33,175.13 in salary deductions.

[8] On the roll Sept. 30, 1916.

[9] Disbursements from Jan. 1, 1916, to Sept. 30, 1916.

In Part II the commission announces its opinion that the various pension schemes now existing under the laws of Illinois for public employees not only "are inharmonious and often contradictory with reference to each other, but that with perhaps a single minor exception they are financially unsound and moving toward a crisis. It shows the urgent need for the adoption by law of a revised pension plan based on true principles and for the prompt merging of existing pension systems into that revised plan on terms not too burdensome to the contributing public authorities or to the contributing employees. The general condition of pension systems operating under the laws of Illinois may be correctly described as one of insolvency."

To reach a solution of the pension problem our most promising course would seem to be to proceed to develop a pension system in line with definite principles which we conceive to be fundamental to efficiency in the public service and to the welfare of employees.

The report then discusses in detail several principles which should control in working out such a revised pension system, as follows:

1. The theory of public employee pensions.

2. The question of who should be beneficiaries—whether employees only, or their widows and children also.

3. The length of service and the age required for a pension.
4. The amount of the pension.
5. The method of providing funds for paying pensions—whether the payments should be spread over a long period in advance and accumulated with interest, or be made currently as pensions need to be paid.
6. The ratio in which employer and employees should contribute the requisite funds with which to pay pensions.
7. The scheme of management.

These principles are developed specifically in the plan which the commission outlines, certain definite recommendations being made as to the amount of contributions, who are to receive benefits, the amount of pensions, pensions for disabled employees and those killed or injured not in the performance of duty, and the management of the funds.

In the opinion of the commission a further study of the pension problem in Illinois should be made with a view to incorporating the results in appropriate legislation. The following are some of the questions suggested as the basis of such study:

1. What should be the minimum age at which an employee should be eligible to receive pension?
2. What number of years in service should be required before an employee is entitled to receive pension?
3. What provision should be made for an employee entering service too late in life to allow him to complete the period of years specified in 2 before reaching the minimum age specified in 1?
4. What method, if any, should be adopted for combining for pension purposes employees from different services in the same political area, or employees from the same, or from different services in separate political areas?
5. Are the ratios of contribution as between employer and employee which are specified [in existing law] the best for practical use? If not, what ratios should be adopted?
6. Should the practice of providing that the contributions of the employer shall be made from special sources of public revenue be abandoned?
7. Is it desirable that the same, or approximately the same, plan be applied in the case of all pension funds, or in the case of certain groups of such funds?
8. Should the majority of each board of pension trustees be appointed by the employer, or should they be elected by the employees?

WAIVER OF EIGHT-HOUR LAW FOR NAVY DEPARTMENT CONTRACTS.

On March 22 last, President Wilson issued an order to enable the Navy Department to secure the more expeditious construction of ships and the procurement of munitions authorized by law. This order corresponds in effect to the order of April 28 issued to the War Department, reproduced in the July MONTHLY REVIEW (p. 55), and authorizes a waiver of the eight-hour law. In connection with

this order the following order was issued June 23, 1917, by Secretary of the Navy Daniels:

Subject: Overtime authorized on destroyers.

1. The department in order to expedite the construction of destroyers authorizes the contractors for such vessels, subject to the terms and conditions of Executive Order No. 2554 of March 22, 1917, to work overtime as required, but in no case to work any individual man more than sixty hours in any one week.

2. The details of hours, etc., subject to the foregoing, may be arranged to suit the local practice and special conditions as they arise.

3. All overtime (more than eight hours a day) should be promptly reported to and checked by the inspectors as usual.

4. This is to apply only during the present emergency.

WORK AT BUREAU OF ENGRAVING AND PRINTING PLACED ON EIGHT-HOUR BASIS.

Secretary McAdoo has ordered that the operations of the Bureau of Engraving and Printing be placed upon an eight-hour basis, both for men and women, six days a week. This action was taken after the receipt of the following report from the committee appointed by the Secretary on July 5 to investigate the conditions and hours of labor in the bureau:

The SECRETARY OF THE TREASURY.

SIR: The committee named by you on Thursday, July 5, charged with the duty of investigating the conditions and hours of labor in the Bureau of Engraving and Printing, have, after an investigation, come to the conclusion that, in view of the advanced stage of all of the emergency work recently imposed upon the bureau, it is now feasible to place the operations of that bureau on an eight-hour basis both for men and women.

The operations connected with the Liberty Loan have imposed enormous and unprecedented demands for the preparation of various certificates and bonds and in quantities which could not be accurately predetermined. The number of documents of a given kind that would be required could be made known only after subscriptions were in; but nevertheless, large preparations had to be made on the basis of assumptions concerning the different denominations and terms of payment that would be subscribed by the public. Since June 15 some information on this subject was at hand, but not accurately in many respects until after June 28, the date of the first installment for payments. The very great discrepancy between some of the anticipations in these respects and the actual results have caused shortages of one kind or another in these papers, and the bureau has been subjected to many instant demands from various Federal reserve banks to meet the exigencies of the situation thus created. There have also been extraordinary demands for Federal reserve bank notes, United States currency, checks of the various disbursing officers, Philippine silver certificates, and stamps for both internal revenue and the Postal Service. Some of the orders placed with the bureau have been sublet to private plants on account of the impossibility of meeting the urgent demands of the Government by the bureau, even when working its force overtime.

Conditions similar to those now existing as to overtime were stated by various witnesses to have existed in certain emergencies in the past, as, for example, in bringing out the Spanish War loan of 1898. Yet none of these periods of stress were as acute as that through which the bureau has just passed.

We find, however, that all pressing orders are now so well in hand that, while certain inconvenience and an increase of expense may result in some branches of the work, it is deemed by the committee best to have the whole plant operated now (say with a delay of two days for adjustment of service conditions) upon an eight-hour basis for six days a week.

It remains, however, that certain other matters, such as allowance of Saturday half holidays, revocation of leave of absence, and permission to take civil-service examinations for employment in other branches of the Government service, are yet to be inquired into and made the subject of a supplemental report.

Trusting that these views will meet your approval, we are,

Very respectfully,

OSCAR T. CROSBY,
O. A. PRICE,
J. L. WILMETH,
Committee.

The following resolution was adopted at a mass meeting held to protest against the order issued by Secretary McAdoo which eliminates all overtime work in the various branches of the bureau:

HON. WILLIAM G. MCADOO,
Secretary of the Treasury, Washington, D. C.

SIR: Whereas it has seemed expedient by your recent order to reduce to an eight-hour day the work in the Bureau of Engraving and Printing; and,

Whereas, in view of the pressing necessity of work on hand at the present time; and

Whereas it is apparently impossible to procure sufficient skilled help to meet the necessities of the present hour, as well as it is likewise the wishes of a large majority of the employees to have the extra time continued, as attested by their presence at a mass meeting held in the bureau of this date, July 10, 1917; Therefore be it

Resolved, That we, in order that the work may go on smoothly and not tend to inconvenience or disorganize the force in its efforts to meet the requirements forced on it by conditions of war time, earnestly request that the hours remain the same as they are at the present writing or as in your judgment may be required.

LOUIS E. BRADFORD,
Chairman of Committee.

WEST VIRGINIA LAW TO PREVENT IDLENESS AND VAGRANCY.

The following act to prevent idleness and vagrancy in West Virginia during the continuance of the war in which the United States is now engaged was passed May 19, 1917, by the legislature of West Virginia at its second extraordinary session:

SECTION 1. It is hereby declared to be the duty of every able-bodied male resident of this State, between the ages of sixteen and sixty years, to habitually and regularly engage in some lawful, useful, and recognized business, profession, occupation, or employment whereby he may produce or earn sufficient to support himself and those legally dependent upon him.

SEC. 2. From the time this act becomes effective, and thenceforward until six months after the termination of the present war between the United States and the Imperial German Government, any able-bodied male resident of this State between the ages of sixteen and sixty, except bona fide students during school term, who shall fail or refuse to regularly and steadily engage for at least thirty-six hours per week in some lawful and recognized business, profession, occupation, or employment whereby he may contribute to the support of himself and those legally dependent upon him, shall be held to be a vagrant within the meaning and effect of this act and shall be guilty of a misdemeanor, and upon conviction thereof shall be fined not more than one hundred dollars for each offense; and as a part of such sentence and punishment such offender shall be by the trial court ordered to work not exceeding sixty days upon the public roads or streets, or upon some other public work being done by and in the county in which such person shall be convicted, or by any municipality therein. One-half of the fair value of any such labor so performed under such sentence shall be paid by the county or municipality receiving the same toward the support of any persons legally dependent upon such vagrant; but, if there shall be no such legal dependents, then no payment shall be made on account of any labor performed under such judgment. Any labor so required by a judgment of conviction hereunder shall be rendered in all respects as is now provided by law in the case of other prisoners in jail.

Prosecutions for vagrancy hereunder shall be instituted and conducted as other criminal prosecutions, and in no case shall the possession by the accused of money, property or income sufficient to support himself and those legally dependent upon him be a defense to any prosecution under this act. In no case shall the claim by the accused of inability to obtain work or employment be a defense to a prosecution hereunder, unless it shall be proved that the accused promptly notified the proper representative of the State council of defense of his inability to obtain employment and requested that work or employment be found for him, and that such employment was not furnished him.

SEC. 3. All justices of the peace, mayors, and police judges within the State are hereby given jurisdiction to try and punish all offenders under this act, or such prosecution may be by indictment. Each week or portion thereof that such resident shall continue a vagrant hereunder shall constitute a separate offense; and no appeal shall be allowed from any judgment of conviction for vagrancy, unless the accused shall give bond, with penalty and security, to be fixed and approved by the court granting the appeal, conditioned not to violate this act during the pendency of such appeal. Any judgment for the performance of labor hereunder may be suspended by the court pronouncing the same, upon the execution by the person convicted of a bond, with the penalty and security approved by the court, conditioned to comply with the provisions of this act for one year from the date of such bond. A violation of the condition of such last-mentioned bond shall entitle the State to recover the amount of the penalty thereof; and, in addition thereto, the convicted person shall be rearrested and required to serve the sentence formerly pronounced against him.

SEC. 4. For the purposes of this act any male person found in this State shall be deemed a resident; and in any prosecution hereunder proof that the accused habitually loiters in idleness in streets, roads, depots, pool rooms, hotels, stores, or other public place, or that he is habitually intoxicated, or is addicted to the use of narcotic drugs, or is a professional gambler, or, being able-bodied, is supported in whole or in part by the labor of any woman or child, shall be prima facie evidence of vagrancy.

SEC. 5. All acts and parts of acts in conflict with this act, or any part hereof, are hereby repealed.

STATUTORY REGULATION OF PRIVATE EMPLOYMENT AGENCIES.

The people of the State of Washington enacted in 1914 Initiative Measure No. 8, popularly known as the Employment Agency Law. On December 3 of that year the governor issued his proclamation announcing that the majority had been in favor of its passage, and declaring it a law effective from that date. The text of the law is as follows:

SECTION 1. The welfare of the State of Washington depends on the welfare of its workers and demands that they be protected from conditions that result in their being liable to imposition and extortion.

The State of Washington therefore exercising herein its police and sovereign power declares that the system of collecting fees from the workers for furnishing them with employment, or with information leading thereto, results frequently in their becoming the victims of imposition and extortion and is therefore detrimental to the welfare of the State.

SEC. 2. It shall be unlawful for any employment agent, his representative, or any other person to demand or receive either directly or indirectly from any person seeking employment, or from any person on his or her behalf, any remuneration or fee whatsoever for furnishing him or her with employment or with information leading thereto.

SEC. 3. For each and every violation of any of the provisions of this act the penalty shall be a fine of not more than one hundred dollars and imprisonment for not more than thirty days.

Even before the official proclamation of the passage of the law proceedings were instituted, on November 25, to secure an injunction preventing its enforcement, on the ground that it was invalid as in conflict with the fourteenth amendment to the Federal Constitution protecting property rights. The injunction was denied and the bill dismissed by a Federal district court, whereupon the case was taken to the Supreme Court of the United States on the constitutional question. A decision was rendered on the 11th of June, 1917, declaring the law unconstitutional, the court being divided 5 to 4 (Adams *v.* Tanner, No. 273, October Term, 1916).

The majority opinion was delivered by Mr. Justice McReynolds, who stated the facts as to the proceedings in the lower court. With reference to the decisions of the State supreme court construing the

law rendered in the meantime, and to the question whether the law, if valid, would practically prohibit the business of the complainants, he said:

In Huntworth *v.* Tanner, 87 Wash. 670, the supreme court held school teachers were not "workers" within the quoted measure and that it did not apply to one conducting an agency patronized only by such teachers and their employers. And in State *v.* Rossman, 161 Pac. Rep. 349, the same court declared it did not in fact prohibit employment agencies since they might charge fees against persons wishing to hire laborers; that it was a valid exercise of State power; that a stenographer and bookkeeper is a "worker"; and that one who charged him a fee for furnishing information leading to employment violated the law.

The bill alleges "that the employment business consists in securing places for persons desiring to work" and unless permitted to collect fees from those asking assistance to such end the business conducted by appellants can not succeed and must be abandoned. We think this conclusion is obviously true. As paid agents their duty is to find places for their principals. To act in behalf of those seeking workers is another and different service, although, of course, the same individual may be engaged in both. Appellants' occupation as agent for workers can not exist unless the latter pay for what they receive. To say it is not prohibited because fees may be collected for something done in behalf of other principals is not good reasoning. The statute is one of prohibition, not regulation. "You take my house when you do take the prop that doth sustain my house; you take my life when you do take the means whereby I live."

Decisions of the court recognizing that employment agencies are subject to regulation and control are cited at this point, but Justice McReynolds failed to find a reason for their absolute suppression, since "there is nothing inherently immoral or dangerous to public welfare in acting as a paid representative of another to find a position in which he can earn an honest living. On the contrary, such service is useful, commendable, and in great demand." He quoted with approval the opinion in the California case of In re Dickey, 144 Cal. 234, which characterizes the business as "not only innocent and innocuous, but highly beneficial." The extent of the business of the plaintiffs, who furnished positions for 90,000 persons in one year, is referred to. Continuing, Justice McReynolds said:

A suggestion on behalf of the State that while a pursuit of this kind "may be beneficial to some particular individuals or in specific cases, economically it is certainly nonuseful, if not vicious, because it compels the needy and unfortunate to pay for that which they are entitled to without fee or price—that is, the right to work," while possibly indicative of the purpose held by those who originated the legislation, in reason gives it no support.

Because abuses may, and probably do, grow up in connection with this business, is adequate reason for hedging it about by proper regulations. But this is not enough to justify destruction of one's right to follow a distinctly useful calling in an upright way. Certainly there is no profession, possibly no business, which does not offer peculiar opportunities for reprehensible practices; and as to every one of them, no doubt, some can be found quite ready earnestly

to maintain that its suppression would be in the public interest. Skillfully directed agitation might also bring about apparent condemnation of any one of them by the public. Happily for all, the fundamenal guaranties of the Constitution can not be freely submerged if and whenever some ostensible justification is advanced and the police power invoked.

The general principles by which the validity of the challenged measure must be determined have been expressed many times in our former opinions. It will suffice to quote from a few.

Of the quotations made at this point by the opinion, only a single sentence is here reproduced:

If there existed a condition of affairs concerning which the legislature of the State, exercising its conceded right to enact laws for the protection of the health, safety, or welfare of the people, might pass the law, it must be sustained; if such action was arbitrary interference with the right to contract or carry on business, and having no just relation to the protection of the public within the scope of legislative power, the act must fail. McLean *v.* Arkansas, 211 U. S. 539, 547, 548.

The opinion concludes as follows:

We are of opinion that Initiative Measure No. 8 as construed by the Supreme Court of Washington is arbitrary and oppressive, and that it unduly restricts the liberty of appellants, guaranteed by the fourteenth amendment, to engage in a useful business. It may not therefore be enforced against them.

Mr. Justice McKenna dissented on the ground that "the law in question is a valid exercise of the police power of the State directed against a demonstrated evil." A dissenting opinion of considerable length was prepared by Mr. Justice Brandeis, Mr. Justice Holmes and Mr. Justice Clarke concurring. Mr. Justice Brandeis referred to the frequently expressed doctrine that "the action of the legislature is final unless the measure adopted appears clearly to be arbitrary or unreasonable or to have no substantial relation to the objects to be attained," and added that these facts and conditions can not "be determined by assumptions or by a priori reasoning. The judgment should be based upon the consideration of relevant facts, actual or possible—ex facto jus oritur" (the law arises from the fact).

In carrying out this method of inquiry into facts, the evils, the remedies, the conditions in the State of Washington, and the fundamental problems were discussed in order, with numerous citations from Government reports and from studies of the questions of unemployment and the procurement of employment. The sources cited included bulletins of the Bureau of Labor Statistics Nos. 68, 119, 192, and 211; the report and testimony submitted to Congress by the United States Commission on Industrial Relations; reports of the Washington State Bureau of Labor; the American Labor Legislation Review, etc. Thus the economic grounds for the act were brought under review and the actual facts and conditions involved

considered. The concluding division of the opinion, under the head "The Fundamental Problem," is quoted in full, exclusive of footnotes giving citations and quotations from the authorities for the statements made:

The problem which confronted the people of Washington was far more comprehensive and fundamental than that of protecting workers applying to the private agencies. It was the chronic problem of unemployment—perhaps the gravest and most difficult problem of modern industry—the problem which, owing to business depression, was the most acute in America during the years 1913 to 1915. In the State of Washington the suffering from unemployment was accentuated by the lack of staple industries operating continuously throughout the year and by unusual fluctuations in the demand for labor, with consequent reduction of wages and increase of social unrest. Students of the larger problem of unemployment appear to agree that establishment of an adequate system of employment offices or labor exchanges is an indispensable first step toward its solution. There is reason to believe that the people of Washington not only considered the collection by the private employment offices of fees from employees a social injustice but that they considered the elimination of the practice a necessary preliminary to the establishment of a constructive policy for dealing with the subject of unemployment.

It is facts and considerations like these which have led the people of Washington to prohibit the collection by employment agencies of fees from applicants for work. And weight should be given to the fact that the statute has been held constitutional by the Supreme Court of Washington and by the Federal district court (three judges sitting)—courts presumably familiar with the local conditions and needs.

In so far as protection of the applicant is a specific purpose of the statute, a precedent was furnished by the act of Congress, December 21, 1898 (30 Stat., 755), which provides, among other things:

"If any person shall demand or receive, either directly or indirectly, from any seaman or other person seeking employment as seaman, or from any person on his behalf, any remuneration whatever for providing him with employment, he shall for every such offense be liable to a penalty of not more than one hundred dollars."

In so far as the statute may be regarded as a step in the effort to overcome industrial maladjustment and unemployment by shifting to the employer the payment of fees, if any, the action taken may be likened to that embodied in the Washington workmen's compensation law, sustained in Mountain Timber Co. *v.* Washington (243 U. S., 219), whereby the financial burden of industrial accidents is required to be borne by the employers.

As was said in Holden *v.* Hardy (169 U. S., 366, 387):

"* * * in view of the fact that from the day Magna Charta was signed to the present moment amendments to the structure of the law have been made with increasing frequency, it is impossible to suppose that they will not continue and the law be forced to adapt itself to new conditions of society, and particularly to the new relations between employers and employees as they arise."

In my opinion, the judgment of the district court should be affirmed.

Two-thirds of the States of the Union have legislation regulating, to some extent, the conduct of private employment agencies. Such laws range in scope from the mere requirement that the agency shall

be registered and pay a license fee to detailed control of the methods of operation, with penal liability for violation of the law and civil liability to persons injured by such violation. Various laws prohibit the dividing of fees with employers of foremen, the sending of persons to employers who have not requested such action, the sending of females to places of ill repute, the conduct of agencies in connection with saloons, lodging houses, etc. In some cases the amount of the fee is limited, and repayment of all or a part is required unless actual and continuing employment is secured. Naturally, other judicial decisions of interest have been made in connection with certain of these provisions. Thus the Supreme Court in Brazee *v.* Michigan (1916), 241 U. S. 340, 36 Sup. Ct. 561, sustained a Michigan law which requires private employment agencies to be licensed, for which a graduated fee is charged ranging from $25 to $100, according to the population of the city in which the agency operates. The case was before the court on the contention that the requirement of a license was an abridgment of the privileges and immunities of citizens of the United States, contrary to the provisions of the fourteenth amendment. This contention the Supreme Court denied, sustaining the law as valid. The statute contains provisions restricting the amount of fees to be charged applicants for labor, and establishing other limitations. One of these is a prohibition of the sending of applicants for employment to any employer who has not applied to the agency for help or labor. This question was included in the discussion of the Supreme Court, and held to be a proper exertion of the police power. The provision as to the amount of fees to be charged was said to be severable from other portions of the act, and therefore capable of elimination without affecting it generally; but as the question of the validity of this provision was not before the court, no opinion was expressed thereupon.

The Supreme Court of California (In re Dickey (1904), 144 Cal. 234, 77 Pac. 924) declared a provision of a State law on the subject of the limitation of fees unconstitutional, and went so far even as to suggest its disapproval of the entire statute, which contained various regulatory provisions. However, the courts of last resort of Illinois (Price *v.* People (1902), 193 Ill. 114, 61 N. E. 844) and New York (People ex rel. Armstrong *v.* Warden (1906), 183 N. Y. 223, 76 N. E. 11) have taken the same position as the United States Supreme Court in sustaining laws requiring licenses for employment agencies as promotive of good order by regulating institutions whose character is such as to afford great opportunities for fraud and oppression affecting immigrants and ignorant people who are largely the patrons of such agencies (Armstrong case); or, as was said in the

Illinois case, regulation is warranted "to protect against the evils of imposition and extortion which have manifested themselves in the conduct of private employment agencies."

A law requiring a license to be obtained by labor agents procuring workmen to be employed by others was held (Watts *v.* Commonwealth (1906), 106 Va. 851, 56 S. E. 223) not to apply to an employee seeking laborers for his employer.

No decision other than that in the Dickey case is at hand as to the constitutionality of provisions limiting fees. It may be noted that the Washington statute under consideration in the Adams case, while forbidding the taking of fees from workers, did not prohibit their collection from employers, and some offices have continued to do business in the State on that basis, as shown by a report of the State bureau of labor quoted by Mr. Justice Brandeis in his dissenting opinion. Both State and Federal agencies, as well as municipal and charitable organizations, have undertaken to meet the needs of employers and employees in the matter of the distribution of employment and the securing of help or positions when desired; and while there is an increasing activity of these agencies, particularly State and Federal, it will apparently be a long time, if it ever occurs, before private agencies are entirely done away with; so that considerable interest would attach to a decision by the United States Supreme Court on the subject of the regulation of fees.

While the Washington statute may be said to have contemplated the large restriction, if not the actual extinction, of private agencies through the method of forbidding the collection of fees from applicants for work, another method, practically prohibitive in effect, has been adopted in certain States with regard to agencies undertaking to procure workmen for employment outside the State. This consists in levying a tax of such an amount as to make the transaction of such business unprofitable. Thus laws of Florida, Georgia, Mississippi, and Virginia require a license tax of $500 in each county where an agency operates for the purpose of securing workmen for employment outside the State. The law of North Carolina requires an annual State tax of $100 and a county tax of $100 in each county where business is transacted; in South Carolina the tax is $2,000 for each county for each year; this completes the list of States having such laws at the end of 1916.

Laws of this class have been declared constitutional (State *v.* Napier (1902), 63 S. C. 60, 41 S. E. 13); and the Supreme Court of the United States has sustained a law of Georgia on this subject (Williams *v.* Fears (1900), 179 U. S. 270, 21 Sup. Ct. 128) against the contention that the act restricted the right of a citizen to move from one State to another, impaired the right to labor, and was class

legislation without a reasonable basis; nor would this court entertain the suggestion that the intention was to prohibit the business, saying that "The intention to prohibit this particular business can not properly be imputed from the amount of the tax payable by those embarked in it, even if we were at liberty on this record to go into that subject."

It is clear that these laws are found only in those States in which there is a comparatively less mobile industrial element and which have not received foreign labor in any considerable amount. Particular attention has recently been drawn to the conditions therein existing by reason of the large drafts made upon the working force of those States to make up for the diminished labor supply consequent upon the European war and the restriction of immigration contained in recent Federal legislation. How far this movement is indicative of a continuing readjustment of the labor supply between the North and the South is of course a matter of surmise, but enough has developed in the past two years to demonstrate the possibility of a larger degree of mobility of the agricultural labor of the South than has been recognized, at least since the movement of such labor to the West which began in the year 1879. The Virginia statute (enacted in March, 1916) is explicit in its statement that the law is an emergency one, "by reason of the fact industries are being crippled by the employment of laborers by irresponsible and itinerant labor agents to be transported to other States." Agents occupying a regular office and transacting all their business therein are required to pay only an annual license tax of $25, thus making a clear distinction between the repressive and the regulative ideas.

JUVENILE EMPLOYMENT THROUGH NONCOMMERCIAL EMPLOYMENT BUREAUS.

In the winter of 1914–15, as part of the campaign against unemployment in the city of New York, the mayor's committee on unemployment issued a directory of philanthropic and semiphilanthropic employment bureaus, listing 71 agencies under these heads. These differed widely in effectiveness, ranging from well-organized employment bureaus to mere centers of unorganized interest in the unemployed; only 36 really deserved to be called employment bureaus. After the immediate emergency was over, among other steps taken to improve the situation in respect to unemployment was the formation of a committee to promote the federation of noncommercial employment agencies of New York City. Such a federation was formed and has since devoted itself to standardizing the work of these agencies, to preventing overlapping, to promoting cooperation, and

in general to improving their effectiveness. Committees were appointed by this federation to investigate and report on various aspects of the work of noncommercial employment agencies, among them being a committee on juvenile work, which in November, 1916, presented to the federation a report dealing with the work done by such agencies in placing boys and girls.[1]

Naturally a report of this kind centers around certain questions. How many juveniles are looking for work? How many and what kind of agencies make a business of finding work for them? How far are these agencies giving the help needed? Could their effectiveness be increased? If so, how?

As to the first question, the committee gives figures indicating that from 30,000 to 40,000 children between 14 and 16 annually leave school to go to work. The number taking out employment papers, as given in June, 1915, was 34,980, of whom 20,207 were boys and 14,773 were girls. The fact that they took employment papers shows that all of these were under 16. In addition to these, there is reason to suppose that during the year some of those who had remained in school after 14, or who were taking special vocational or trade courses, would join the ranks of the workers. On June 30, 1916, there were close on to 40,000 children between the ages of 14 and 16 who had not taken out working papers, but who were either in the high schools or taking some special vocational or trade training. How many of these would be looking for work during the year there is no way of knowing, but on the whole there seems abundant reason for agreeing that the number of children leaving school to begin work is large, and that there is much need for organized effort to help them find work which is suited to their abilities, which is carried on under healthful conditions, and which offers some promise for the future.

The great majority of these children, the committee believes, find their first job by chance. They or their parents or friends know of a place, and they take it without any consideration of whether or not it is a suitable and promising opening. Such a method, the committee feels, "does very well in a simple pioneer society, but it serves more and more poorly as industrial division of labor and specialization increase." How many obtain their first job through commercial employment agencies is not known, but as few if any such agencies specialize on juvenile work the proportion is probably not large. The remainder who wish for some more intelligent and purposeful way of choosing their work than that of simply looking for something, no matter what, have their choice of two kinds of employment

[1] Organized Noncommercial Employment Work for Juveniles in New York City. A typewritten report to the Federation of Noncommercial Employment Bureaus by its committee on juvenile work. November, 1916.

agencies: Free public employment agencies and private noncommercial agencies.

The free public employment agencies are of three kinds—national, State, and city. The national employment work is conducted through the immigration offices, and includes no separate juvenile division. The State employment bureaus had not, at the time of this report, formed any separate juvenile divisions, though careful consideration was given to placing any juveniles who might apply. The director was anxious to secure special appropriations which would permit the formation of juvenile divisions, and, with the backing of various civic organizations, hoped to obtain them during the current year.

The public employment bureau of the city of New York maintains at its central office a separate division for boys under 18. Very few under 16 apply here. For girls and women the divisions at the central office are not along age lines, but are based on the kind of position wanted, whether factory, domestic, or commercial or mercantile. Most of the branches, like the central office, have no separate divisions for juveniles, but in October, 1916, the Yorkville branch, under a new vocation committee, combined its work with that of several local agencies, including churches, settlements, and the public schools. Special funds were raised from local sources for a year's experiment in juvenile guidance and placement work. The work is under the immediate supervision of the assistant director of the attendance division (of the public schools), the superintendent of the public employment bureau, and the head worker of the Lenox Hill House.

The attendance division reports to the committee the pertinent facts with regard to every child of school age who has obtained working papers. Cognizance is taken of the home conditions, and school and work records, and careful consideration is given to the abilities and desires and future of these young people. Suitable places are sought; the working conditions are examined, either by a representative of the committee or through the federation information bureau. Placement work is done in the name of the public employment bureau and by specially assigned representatives working in harmony with the general plan. In accordance with the established practice of the former Lenox Hill bureau, follow-up work is done to assure the actual satisfactoriness of the position and the progress of the person placed. Evening hours have been established on Tuesday and Friday, when boys and girls who have already been placed can report their progress and any desire which they may feel for a change of employment.

The committee hopes that this laboratory work will demonstrate the best method by which New York shall meet the problem for all those leaving its schools and also the proper distribution of responsibility and function between education and employment authorities and voluntary social forces.

The work of the public schools in placing pupils who are ready to go to work might be looked upon as midway between the work of public agencies and private noncommercial agencies, but in this

report it is classed with the latter. The Washington Irving High School, the Julia Richman High School, and the Manhattan Trade School for Girls have for some years past had well-organized placement bureaus which take care of their graduates and many of the undergraduates. Such placement is apt to be more successful than that of any other class of bureau.

The student's vocational interests and aptitudes are made a subject of study from the time he enters the high or technical school, so that upon his graduation he can be much more intelligently placed by the school employment director than is the case with boys and girls about whom nothing more is known than the facts they are willing to give on the application blank of an outside placement agency.

Most of the other high schools of New York, and a few of the elementary schools, do a certain amount of placement work but have no organized bureaus. There are approximately 6,000 high-school graduates to be cared for annually.

Among the private noncommercial bureaus of the city the committee found 30, including the 3 school bureaus mentioned, which either dealt exclusively with juveniles or had separate divisions for them, the list being as follows:

1. Julia Richman High School.
2. Manhattan Trade School.
3. Washington Irving High School.
4. Alliance Employment Bureau.
5. Association for Improving the Condition of the Poor.
6. Big Brothers' Organization.
7. Children's Aid Society.
8. Newsboys' Home.
9. Emanuel Sisterhood.
10. Federated Employment Bureau for Jewish Girls.
11. Girls' Protective League.
12. Fellowship House.
13. Henry Meinhardt Settlement.
14. Hebrew Technical School.
15. Hebrew Technical Institute for Boys.
16. Industrial Bureau National League on Urban Conditions Among Negroes.
17. Jewish Community.
18. Richmond Hill House.
19. St. Paul's Employment Bureau.
20. Salvation Army.
21. Vacation War Relief Free Employment Bureau.
22. West Side W. M. C. A.
23. Y. W. C. A., Central Branch, Manhattan.
24. Y. M. H. A.
25. Y. M. C. A., Twenty-third Street branch.
26. Labor Temple.

BROOKLYN.

27. Brooklyn Juvenile Probation Association.
28. Eastern District Y. M. C. A.
29. Y. M. C. A., Central Branch, Brooklyn.
30. Y. W. C. A., Central Branch, Brooklyn.

An idea of the importance of their work may be gained from the figures they give, to the effect that they registered 27,268 and placed 12,386 persons under 18 years of age during the first six months of last year. Of these bureaus there are eight which specifically base their work upon persons just leaving school and which make a systematic endeavor to follow up such persons, both before and after placing them.

The committee finds that there are several advantages to be gained by establishing separate divisions for the juveniles, instead of handling their applications along with those of adults.

Where the juvenile department has been segregated, the enforcement of the provisions of the compulsory education and of the State labor law is more likely to be insisted upon than in bureaus dealing with adults and juveniles together. The juvenile employment bureau, by its study of industrial opportunities, becomes fitted to act also as vocational and prevocational guidance bureau, and it realizes the necessity for follow-up work covering a period of several years.

The methods of registration and placement followed by 14 of these 30 bureaus are regarded as satisfactory, and the methods of 12 others are considered fair. The committee feels that the minimum requirements which entitle a bureau to be considered satisfactory are that it should come reasonably close to keeping uniform records; that it should secure the information necessary to determine the applicant's fitness for the place he wishes to fill; that it should be familiar with the requirements of the positions to be filled, the conditions of employment, and the opportunities for advancement offered; that it should have regular places and hours for its work; and that during these hours competent persons should be regularly in attendance. Some of these requirements seem rather elementary, but so-called bureaus were found in which some or all were lacking.

The committee finds that higher ideals of what their service should be are coming into force among these bureaus. Thirteen of the private and two of the public bureaus dealing with juveniles have a minimum-wage standard, below which they will not attempt to fill positions. Twenty-five of the bureaus make a practice of investigating applicants' references, and several others do so occasionally. Twelve of the bureaus have tests or methods for rating applicants for work. A majority attempt to secure fair treatment for the juveniles placed by defining the conditions of employment on their cards of introduction in such a way as to establish the terms on which they are employed.

In making its recommendations the committee calls attention first to the unequal development of organized noncommercial placement work in the city.

A map of the present facilities shows 6 places in Brooklyn, 30 in Manhattan, 1 in The Bronx, and none in Queens or Richmond. The agencies in Manhattan are so distributed that Harlem and the upper Broadway sections are practically without service. The first recommendation is that this unoccupied field should be taken up either by the extension of one or more of the existing bureaus or by new organizations affiliated with or at least in harmony with one of the existing bureaus, and preferably one of the public bureaus.

The committee also recommends closer cooperation between existing agencies for placing children, the use of uniform records, and frequent conferences of those engaged in this work. Monthly figures as to numbers, ages, and sex of applicants and persons placed should be centralized and published. The agencies should study from all available sources the history and capacity of the children to be placed, and parents should be taken into consultation whenever practicable. It is urged that all positions to be filled by children or young persons should be thoroughly investigated, and the use of the federation information bureau is offered to supplement the work of the various agencies in this direction. The bureaus are urged to take a consistent stand for fair rates of pay, for due notice on both sides before the severance of relations, and for well-adjusted hours of work. They are also urged to keep in touch with applicants who have been placed, to make themselves familiar with the vocational training opportunities of the city, and to encourage young people to take advantage of these whenever possible. Finally, the committee calls attention to the need for a synopsis catalogue of the occupations of New York City, similar to that provided for the city of Liverpool. This should give in simple graphic form the relative importance of each occupation; the entering, average weekly, and normal wages; regularity of employment; length of apprenticeship; available trade training opportunities; and its physical or sex requirements or limitations.

EMPLOYMENT IN SELECTED INDUSTRIES IN JUNE, 1917.

In comparing the figures for June, 1917, with figures for June, 1916, from identical establishments it appears that there was a larger number of people on the pay roll in 10 of the 13 industries canvassed in June of this year than in June a year ago. The greatest increase was 18.4 per cent, in the iron and steel industry. Cotton manufacturing, car building and repairing, and silk were the industries showing a decrease in number of employees.

There was an increase in the total amount of the pay roll in each of the 13 industries for the month of June, 1917, as compared with June, 1916. The largest per cent of increase, 42.8 per cent, appears in the iron and steel industry. Eight of the industries had an increase of more than 20 per cent.

One shoe factory was reported closed on account of labor troubles during June; a second has been closed since May 1, but in this instance the reason was not given; and a third factory stated that it was working up to only half of its normal capacity. One establishment in the hosiery and underwear industry reported a strike in

which three-fourths of the employees were out, and one woolen plant stated that the weavers had gone on a strike.

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

Industry.	Establishments to which inquiries were sent.	Establishments reporting for June both years.	Period of pay roll.	Number on pay roll in June—		Per cent of increase (+) or decrease (−).	Amount of pay roll in June—		Per cent of increase (+) or decrease (−).
				1916	1917		1916	1917	
Boots and shoes	85	66	1 week..	52,248	54,245	+ 3.8	$692,545	$802,071	+15.8
Cotton manufacturing	89	52	...do....	43,074	42,769	− .7	414,202	502,510	+21.3
Cotton finishing	19	9	...do....	7,403	7,592	+ 2.6	86,968	108,179	+24.4
Hosiery and underwear	82	53	...do....	28,701	29,088	+ 1.3	272,084	321,305	+18.1
Woolen	56	44	...do....	40,204	40,753	+ 1.4	480,689	600,740	+25.0
Silk	65	40	2 weeks.	14,375	13,612	− 5.3	307,197	313,192	+ 2.0
Men's ready-made clothing.	86	33	1 week..	17,730	19,957	+12.6	246,993	307,834	+24.6
Iron and steel	143	94	½ month.	153,708	182,034	+18.4	5,847,274	8,348,089	+42.8
Car building and repairing	78	26	...do....	34,143	31,967	− 6.4	1,152,053	1,240,511	+ 7.7
Cigar manufacturing	103	68	1 week..	19,340	19,953	+ 3.2	207,872	250,641	+20.6
Automobile manufacturing.	67	40	...do....	93,260	106,867	+14.6	1,901,506	2,404,491	+26.5
Leather manufacturing	44	29	...do....	13,724	14,015	+ 2.1	187,497	217,194	+15.8
Paper making	80	42	...do....	18,625	19,737	+ 6.0	258,755	313,565	+21.2

Following is a table showing the number of persons actually working on the last full day of the reported pay period in June of this year as compared with June, 1916. It should be noted that although each industry is represented in the table, the number of establishments including this information in their reports was rather small.

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

Industry.	Establishments reporting for June both years.	Period of pay roll.	Number actually working on last full day of reported pay period in June—		Per cent of increase (+) or decrease (−).
			1916	1917	
Boots and shoes	21	1 week....	11,030	11,650	+ 5.6
Cotton manufacturing	34	...do.....	23,787	23,969	+ .8
Cotton finishing	5	...do.....	3,687	3,567	− 3.3
Hosiery and underwear	14	...do.....	9,289	9,129	− 1.6
Woolen	31	...do.....	25,278	25,801	+ 2.1
Silk	23	2 weeks...	10,241	9,335	− 8.8
Men's ready-made clothing	5	1 week....	669	609	− 9.0
Iron and steel	72	½ month...	119,625	138,365	+15.7
Car building and repairing	23	...do.....	28,239	26,924	− 4.7
Cigar manufacturing	28	1 week....	4,997	5,260	+ 5.3
Automobile manufacturing	21	...do.....	53,963	69,601	+12.3
Leather manufacturing	12	...do.....	7,819	8,046	+ 2.9
Paper making	10	...do.....	4,262	4,263	(1)

[1] Increase of less than one-tenth of 1 per cent.

A third table presents a comparison of employment in identical establishments in May, 1917, and June, 1917. The figures show that

in June there was an increase in the number of persons on the pay roll in 7 of the 13 industries. The greatest increase indicated was 4 per cent, in men's ready-made clothing, an expected seasonal change.

There was an increase in the amount of money paid to employees in 8 of the industries. Boots and shoes show the largest increase—8.2 per cent; men's ready-made clothing had an increase of 6.6 per cent, and cotton manufacturing 5.9 per cent. The greatest decrease was 6.4 per cent, in automobile manufacturing.

COMPARISON OF EMPLOYMENT IN IDENTICAL ESTABLISHMENTS IN MAY, 1917, AND JUNE, 1917.

Industry.	Establishments to which inquiries were sent.	Establishments reporting for May and June, 1917.	Period of pay roll.	Number on pay roll in—		Per cent of increase (+) or decrease (−).	Amount of pay roll in—		Per cent of increase (+) or decrease (−).
				May, 1917.	June, 1917.		May, 1917.	June, 1917.	
Boots and shoes	85	64	1 week	51,559	52,395	+1.6	$760,554	$823,134	+8.2
Cotton manufacturing	89	52	do	44,203	44,329	+ .3	486,825	515,478	+5.9
Cotton finishing	19	10	do	10,294	10,310	+ .2	152,881	154,986	+1.4
Hosiery and underwear	82	49	do	27,611	27,349	− .9	301,581	307,371	+1.9
Woolen	56	46	do	41,732	41,201	−1.3	614,822	608,922	−1.0
Silk	65	37	2 weeks	12,388	12,180	−1.7	293,142	282,108	−3.8
Men's ready-made clothing	86	34	1 week	19,354	20,126	+4.0	291,184	310,388	+6.6
Iron and steel	143	95	½ month	180,593	182,207	+ .9	8,390,919	8,395,208	+ .1
Car building and repairing	78	27	do	33,111	32,940	− .5	1,264,380	1,258,785	− .4
Cigar manufacturing	103	70	1 week	20,699	21,118	+2.0	255,205	267,278	+4.7
Automobile manufacturing	67	40	do	111,178	106,845	−3.9	2,577,409	2,411,549	−6.4
Leather manufacturing	44	29	do	15,869	15,365	−3.2	246,388	240,670	−2.3
Paper making	80	41	do	18,759	19,003	+1.3	295,172	300,046	+1.7

Comparable figures as to the number of employees actually working on the last full day of the reported pay period in May and June of this year are given in the next table. Again, however, it must be noted that the number of establishments reporting this data in most of the industries is small.

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

Industry.	Establishments reporting for May and June, 1917.	Period of pay roll.	Number actually working on last full day of reported pay period in—		Per cent of increase (+) or decrease (−).
			May, 1917.	June, 1917.	
Boots and shoes	24	1 week	12,699	13,060	+2.8
Cotton manufacturing	39	do	29,559	30,253	+2.3
Cotton finishing	5	do	3,506	3,567	+1.7
Hosiery and underwear	16	do	11,344	11,333	− .1
Woolen	37	do	33,752	32,555	−3.5
Silk	21	2 weeks	7,705	7,698	− .1
Men's ready-made clothing	6	1 week	3,499	3,391	−3.1
Iron and steel	73	½ month	138,285	136,928	−1.0
Car building and repairing	25	do	28,325	28,633	+1.1
Cigar manufacturing	32	1 week	5,802	5,898	+1.7
Automobile manufacturing	24	do	66,457	63,425	−4.6
Leather manufacturing	13	do	9,775	9,528	−2.5
Paper making	10	do	4,148	4,138	− .2

The bureau appreciates the cooperation of its correspondents in furnishing data month by month, and from the letters and inquiries received it is evident that this feature of the MONTHLY REVIEW is proving of material service.

In order that the greatest possible amount of data may be included in the compilation, correspondents are urged to mail reports so as to reach Washington not later than the 12th of the month following the month for which the return is made; thus, figures for the July pay roll should be in Washington, if possible, on or before August 12.

CHANGES IN WAGE RATES.

During the period May 15 to June 15, 1917, wage rate changes were reported by correspondent establishments in 11 of the 13 industries covered by the inquiry. In boot and shoe manufacturing and the woolen industry no establishment reported having made any general increase in wage rates. Of the establishments reporting, many did not answer the inquiry relative to this item, but in such cases it is not likely that changes were made.

Between the dates specified above, 20 establishments in cotton manufacturing reported having made increases in wage rates. The advance in 17 of these establishments was 10 per cent, affecting all employees. One plant gave a 10 per cent increase to 98.5 per cent of the force and a 5 per cent increase to the remaining 1.5 per cent. Two other establishments reported a 10 per cent increase, 98 per cent of the force sharing this in one establishment and 75 per cent of the force in the other.

In the iron and steel industry 5 plants gave an increase of 20 per cent, affecting all employees. In one instance the entire force received an increase of 25 per cent, while in another all received a 10 per cent increase. There was an increase of 10 per cent affecting 30 per cent of the persons employed in one establishment, and in another a 5.4 per cent increase, affecting 7 per cent of the force. One establishment reported that slight increases had been given to about 3 per cent of the force.

In the car building and repairing industry 1 establishment gave an increase of 5 cents per hour to certain mechanics and helpers and 2.5 cents per hour to apprentices, these two groups together constituting one-fourth of the entire force. An increase of 6.9 per cent to 71.7 per cent of the force was granted in one instance, while in another an increase of 15.1 per cent was given to 23.2 per cent of the force. In one case an increase of 11.7 per cent to 69.4 per cent of the employees was given. One plant reported an increase of 10.6 per cent to 57.7 per cent of the force, while all persons on an hourly basis in another establishment received an increase of 7.35

per cent. An increase of 15 per cent affecting 95 per cent of the force was indicated by another establishment. Eight per cent of the force was granted a 6.8 per cent increase in one instance. Two other establishments reported increases, one giving 6 per cent and the other 10 per cent. The proportion of the force affected was not mentioned in either case.

Seven establishments in the hosiery and underwear industry reported increases. A 10 per cent general increase was given in 4 of them, and another granted an increase of 10 per cent, but failed to state the proportion of the force affected. One establishment gave a 15 per cent increase to 60 per cent of the force, while another stated that toppers were granted a 12.5 per cent increase.

In the silk industry 2 establishments reported having granted a 10 per cent increase affecting the entire force. A third gave a 10 per cent increase in some departments, and a fourth granted an increase of about 10 per cent to all.

Only a few increases were indicated in the 6 remaining industries. One establishment in men's ready-made clothing gave a 15 per cent increase to all employed and another granted a 10 per cent increase to 10 per cent of the force. In cotton finishing one plant stated that the hours of work had been reduced from 60 to 55 per week, which was the equivalent of a 9 per cent increase in hourly wages. There were two increases reported in cigar manufacturing, one plant having given a 10 per cent advance and the other 8 per cent, affecting all employees in each case. In leather manufacturing one establishment granted an additional $1.50 per week to each person, while another gave a 10 per cent increase, but did not state the proportion of the force affected. The entire force in one paper manufacturing plant received a 20 per cent increase. In automobile manufacturing a small advance to part of the force was reported by one establishment. One establishment in this industry indicated that the average hourly productive rate had decreased $0.0048.

EMPLOYMENT IN THE STATE OF NEW YORK IN JUNE, 1917.

The labor market in New York State in June is reviewed in the following statement issued by the Bureau of Statistics and Information of the New York State Department of Labor:

MANUFACTURING ACTIVITY IN JUNE.

[As reported by 1,600 representative firms with over 600,000 employees, or more than one-third of the factory workers in the State, and a weekly pay roll of over $9,000,000.]

Manufacturing activity in New York State underwent slight change in June, 1917, as compared with May. The number of employees decreased by 1 per cent

and the aggregate of wages by less than one-half of 1 per cent. There were increases in wage rates and expansion of plants to some extent. Offsetting these were slackness caused by flood conditions up State, the dull season, and labor disputes. These results are indicated by returns received from a large number of leading factories, including all of the important manufacturing industries and localities in the State and covering the last three years. As compared with the previous month, 4 of the 11 industrial groups reported gains in both number of employees and amount of wages paid out. In two other groups, there were increased wages with a decrease in employees. In five groups, there were decreases in both employees and wages. While the increases and decreases were generally slight, the increases were sufficient to establish new high records in wages for 6 of the groups. Activity in June, 1917, was much greater than in the corresponding month of each of the last three years. As compared with June, 1916, the increase in employees was 4 per cent and in wages 17 per cent. The corresponding increases over June, 1915, were 22 per cent and 54 per cent, and over June, 1914, they were 19 per cent and 53 per cent, respectively.

The average per capita earnings for one week in June, 1917, of all employees, including both sexes, were $16.20. In May, 1917, these earnings were $16.15. Similar figures for June, one year ago were $14.41; for June, two years ago, $12.81; and for June, 1914, they were $12.70.

The *stone, clay, and glass products* group had in June, 1917, 5 per cent fewer employees and paid out 3 per cent less in wages than in May. The decline was most pronounced in lime, cement and plaster mills, and in the glass industry. Miscellaneous stone and minerals underwent practically no change, and the brick, tile, and pottery industry paid out more wages than in May. As compared with June of last year, the group as a whole had 3 per cent more employees and paid out 21 per cent more wages.

The *metals, machinery, and conveyances* group, the weightiest in these returns both as to number of employees and amount of wages paid, reported in June a decrease of less than 1 per cent in employees and a similar increase in wages as compared with May. This established a new high record in wages for this group. There were some labor disputes and some wage increases. Six of the twelve industries in the group reported increases in both employees and wages and six reported decreases in both. The largest industry to report a decrease was the manufacture of noncommercial automobiles. The manufacture of brass and copper goods and of sheet-metal work and hardware were the next largest to report decreases. The machinery industry, much the largest in the group, reported an increase. The manufacture and repair of railway rolling stock, and of pig iron and rolling mill products, both important industries, likewise reported gains. As compared with June of last year, the group had 7 per cent more employees and paid out 22 per cent more wages.

The *wood manufactures* group in June reported a loss of nearly 1 per cent in employees and nearly 2 per cent in wages compared with May. Saw and planing mills reported a seasonal increase. The manufacture of furniture and cabinet work was less active, and that of musical instruments decidedly less so. The group had 3 per cent more employees and paid out 15 per cent more wages than in June of last year.

The *furs, leather, and rubber goods* group in June decreased its number of employees by nearly 1 per cent and increased its aggregate of wages by more than 1 per cent as compared with May, establishing a new high record for wages. Boot and shoe manufacturing, which dominates the group, made a slight gain. Each industry reported a gain in wages, except pearl-horn-bone-hair goods, which reported a decline. As compared with June, one year ago,

the group employed 4 per cent more workers and paid out 18 per cent more wages.

The *chemicals* group increased its number of employees slightly in June and paid out 3 per cent more wages, thereby establishing new high records in both respects. Each of the four industries, except miscellaneous chemical products, reported gains, the gain in wages exceeding that in employees in each instance. As compared with June of last year, the group had 7 per cent more employees and paid out 23 per cent more wages.

The *paper* industry reported in June nearly 2 per cent more employees and paid 3 per cent more wages than in May, thereby establishing a new high wage record for the group. The number of employees was 9 per cent greater and the amount of wages was 23 per cent greater than in June of last year.

The *printing and paper goods* group reported a loss of 2 per cent in number of workers and of more than 1 per cent in amount of wages in June as compared with May. The loss was shared by each of the 3 industries in the group. There were slightly fewer employees in the group than in June of last year but 5 per cent more wages was paid out.

The *textiles* group had 2 per cent fewer employees in June than in May and paid out 2 per cent less in wages. There was a loss in wages in four of the industries in the group. Wool manufactures and cotton goods suffered the greatest losses, due in part to slack season and partly to flood conditions. As compared with June of last year, the group employed one-half of 1 per cent more employees and paid out 13 per cent more wages.

The *clothing, millinery, and laundering* group in June reported nearly 4 per cent fewer employees and 3 per cent less wages than in May. Men's clothing, alone of the seven industries, reported an increase, which was seasonal. Women's clothing, women's underwear, and millinery reported seasonal decreases. As compared with June of last year, the group had 2 per cent more employees and paid out 11 per cent more wages.

The *food, liquors, and tobacco* group reported in June a negligible increase in employees and less than 1 per cent increase in wages as compared with May. This slight increase established a new high record for wages in this group. The most marked gain was in fruit and vegetable canneries for which the season has opened. Slaughtering and meat packing establishments and the cigars and tobacco industry reported gains. Miscellaneous groceries, bread and bakery products, and confectionery reported losses.

The *water, light, and power* industry increased both its number of employees and its wage payment of 5 per cent in June as compared with May, thereby establishing new high records in both respects. As compared with June of last year, there were 7 per cent more workers and 13 per cent more wages.

BUILDING ACTIVITY IN PRINCIPAL CITIES.

[As reported by building departments.]

Building operations were better in June, 1917, than in the previous month, according to returns received from the building departments of the 10 first and second class cities of the State. The estimated cost of work (four-fifths of which was new construction) for which permits were issued was 38 per cent greater than in May. Four cities only—Buffalo, New York, Schenectady, and Yonkers—reported an increase, the other six reporting decreases. The borough of Brooklyn, in which was more than one-half of the total value of all permits

in the entire State, was responsible for the increase. As compared with June, 1916, there was a decrease of 50 per cent, three cities only—Schenectady, Utica, and Yonkers—reporting an increase.

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

Data are presented in the table below showing the work of the public employment offices for the month of June, 1917, and, in instances where figures are available, for June, 1916. For the United States the table includes figures from Federal employment bureaus in 29 States and the District of Columbia, Federal-State employment bureaus in 2 States, a Federal-State-county-municipal employment bureau in 1 State, Federal-municipal employment bureaus in 1 State, State employment bureaus in 16 States, State-municipal employment bureaus in 2 States, municipal employment bureaus in 8 States, and a municipal-private employment bureau in 1 State. Figures from 1 Canadian employment bureau are also given.

OPERATIONS OF PUBLIC EMPLOYMENT OFFICES, 1916 AND 1917.

UNITED STATES.

State, city, and kind of office.	Applications from employers.	Persons asked for by employers.	Persons applying for work.		Persons referred to positions.	Positions filled.
			New registrations.	Renewals.		
Alabama:						
Mobile (Federal)—						
June, 1916	1	1	[1] 14	[2]	[2]	[2]
June, 1917	0	0	[1] 21	[2]	0	0
Arkansas:						
Little Rock (State)—						
June, 1917	556	780	260	65	284	185
California:						
Berkeley (municipal)—						
June, 1916	203	224	76	428	216	216
June, 1917	240	272	53	280	219	219
Fresno (municipal)—						
June, 1916	244	760	688	72	658	655
June, 1917	132	362	221	347	362	357
Los Angeles (Federal)—						
June, 1916	[2]	[2]	[1] 112	[2]	[2]	[2]
June, 1917	4	10	[1] 116	[2]	11	10
Los Angeles (State-municipal)—						
June, 1916 [3]	0	3,903	2,761	[2]	4,986	3,903
June, 1917 [3]	3,787	8,257	2,558	[2]	7,138	7,274
Sacramento (Federal)—						
June, 1917	14	24	[1] 40	[2]	14	8
San Diego (Federal)—						
June, 1916	291	542	[1] 1,041	[2]	828	572
June, 1917	650	1,674	[1] 999	[2]	1,226	1,039
San Francisco (Federal)—						
June, 1916	348	685	[1] 1,539	[2]	675	478
June, 1917	412	1,183	[1] 1,378	[2]	1,096	769
Total—						
June, 1916					[2]	[2]
June, 1917					10,066	9,676

[1] Number applying for work. [2] Not reported. [3] Includes Los Angeles district, 8 counties.

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

UNITED STATES—Continued.

State, city, and kind of office.	Applications from employers.	Persons asked for by employers.	Persons applying for work.		Persons referred to positions.	Positions filled.
			New registrations.	Renewals.		
Colorado:						
Colorado Springs (State)—						
June, 1916	[1]	964	906	[1]	860	[1]
June, 1917	[1]	811	699	[1]	660	660
Denver (Federal)—						
June, 1916	5	8	[2] 67	[1]	55	1
June, 1917	1	500	[2] 73	[1]	78	78
Denver No. 1 (State)—						
June, 1916	[1]	422	415	[1]	344	[1]
June, 1917	[1]	801	548	[1]	506	506
Denver No. 2 (State)—						
June, 1916	[1]	446	463	[1]	374	[1]
June, 1917	[1]	1,114	453	[1]	[1]	406
Pueblo (State)—						
June, 1916	[1]	1,088	701	[1]	669	[1]
June, 1917	[1]	778	710	[1]	700	700
Total—						
June, 1916					2,242	[1]
June, 1917					[1]	2,350
Connecticut:						
Bridgeport (State)—						
June, 1917	[1]	651	[2] 833	[1]	[1]	611
Hartford (State)—						
June, 1917	[1]	1,324	[2] 1,574	[1]	[1]	1,084
New Haven (State)—						
June, 1917	[1]	956	[2] 1,211	[1]	[1]	820
Norwich (State)—						
June, 1917	[1]	344	[2] 422	[1]	[1]	329
Waterbury (State)—						
June, 1917	[1]	181	[2] 277	[1]	[1]	139
Total—						
June, 1917					[1]	2,983
Delaware:						
Wilmington (Federal)—						
June, 1917	45	[1]	[2] 171	[1]	156	138
Wilmington (schoolboy cooperation)—						
June, 1917	[1]	55	55	[1]	55	55
Total—						
June, 1917					211	193
District of Columbia:						
Washington (Federal)—						
June, 1917	94	221	[2] 391	[1]	277	271
Florida:						
Jacksonville (Federal)—						
June, 1916	[1]	[1]	[2] 365	[1]	188	186
June, 1917	0	0	[2] 42	[1]	0	0
Miami (Federal)—						
June, 1916	5	8	[2] 44	[1]	8	8
June, 1917	0	0	[2] 15	[1]	0	0
Total—						
June, 1916					196	194
June, 1917					0	0
Georgia:						
Savannah (Federal)—						
June, 1916	8	269	[2] 872	[1]	265	264
June, 1917	2	2,000	[2] 99	( )	31	22
Idaho:						
Boise (Municipal)—						
June, 1916	48	96	20	[1]	16	13
June, 1917	150	219	169	[1]	169	133
Moscow (Federal)—						
June, 1916	[1]	[1]	1	[1]	1	[1]
June, 1917	11	11	[2] 11	[1]	11	11
Total—						
June, 1916					17	[1]
June, 1917					180	144

[1] Not reported.

[2] Number applying for work.

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

UNITED STATES—Continued.

State, city, and kind of office.	Applications from employers.	Persons asked for by employers.	Persons applying for work.		Persons referred to positions.	Positions filled.
			New registrations.	Renewals.		
Illinois:						
Chicago (Federal)—						
June, 1916	302	1,250	[1] 1,875	(2)	1,101	1,062
June, 1917	570	3,015	[1] 2,969	(2)	2,300	1,929
Chicago (State)—						
June, 1916	(2)	10,848	8,069	(2)	(2)	7,516
June, 1917	4,683	13,321	13,292	1,088	13,205	10,735
East St. Louis (State)—						
June, 1916	(2)	1,775	1,532	(2)	(2)	1,133
June, 1917	484	1,176	479	273	730	712
Peoria (State)—						
June, 1916	(2)	959	1,171	(2)	(2)	906
June, 1917	838	1,287	188	837	1,007	997
Rock Island-Moline (State)—						
June, 1916	(2)	708	776	(2)	(2)	575
June, 1917	513	1,181	538	322	760	701
Rockford (State)—						
June, 1916	(2)	893	996	(2)	(2)	762
June, 1917	736	1,311	823	298	924	860
Springfield (State)—						
June, 1916	(2)	775	829	(2)	(2)	655
June, 1917	450	571	193	335	490	465
Total—						
June, 1916					(2)	12,609
June, 1917					19,416	16,399
Indiana:						
Evansville (State)—						
June, 1916	68	690	880	(2)	830	690
June, 1917	187	314	389	112	427	297
Fort Wayne (State)—						
June, 1916	401	682	436	173	699	504
June, 1917	252	546	82	451	569	533
Indianapolis (Federal)—						
June, 1916	75	519	[1] 852	(2)	708	482
June, 1917	145	759	[1] 905	(2)	658	602
Indianapolis (State)—						
June, 1917	1,424	1,355	1,311	113	1,408	1,355
South Bend (State)—						
June, 1916	267	1,141	511	61	561	426
June, 1917	163	577	600	44	569	447
Terre Haute (State)—						
June, 1916	(2)	561	(2)	(2)	470	426
June, 1917	151	357	191	69	256	251
Total—						
June, 1916					[3] 3,228	[3] 2,528
June, 1917					3,887	3,485
Iowa:						
Des Moines (State)—						
June, 1917	82	247	129	18	168	107
Kansas:						
Topeka (State)—						
June, 1916 [4]	31	61	126	4	80	59
June, 1917	110	130	147	(2)	128	124
Kentucky:						
Louisville (State)—						
June, 1916	362	362	[1] 538	(2)	177	(2)
June, 1917	191	186	[1] 254	(2)	186	186
Louisville (municipal-private)—						
June, 1916	(2)	304	553	722	385	191
June, 1917	185	486	235	399	380	159
Total—						
June, 1916					562	(2)
June, 1917					566	345

[1] Number applying for work.
[2] Not reported.
[3] Exclusive of Indianapolis State office, not reported.
[4] Figures do not include thousands who applied for harvest work.

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

UNITED STATES—Continued.

State, city, and kind of office.	Applications from employers.	Persons asked for by employers.	Persons applying for work.		Persons referred to positions.	Positions filled.
			New registrations.	Renewals		
Louisiana:						
New Orleans (Federal-State)—						
June, 1916	6	8	[1] 93	[2]	17	6
June, 1917	69	175	[1] 220	[2]	250	162
Maine:						
Portland (Federal)—						
June, 1917	0	0	[1] 9	[2]	0	0
Maryland:						
Baltimore (Federal)—						
June, 1916	10	16	[1] 86	[2]	82	82
June, 1917	55	309	[1] 293	[2]	119	219
Massachusetts:						
Boston (Federal)—						
June, 1916	5	151	[1] 146	[2]	76	76
June, 1917	46	928	[1] 1,048	[2]	630	340
Boston (State)—						
June, 1916	2,347	2,663	[3] 1,696	[2]	[4] 3,997	1,845
June, 1917	2,297	2,788	[3] 1,842	[2]	[4] 4,263	1,790
Springfield (State)—						
June, 1916	983	1,233	[3] 642	[2]	[4] 1,601	931
June, 1917	1,097	1,547	[3] 604	[2]	[4] 1,694	1,142
Worcester (State)—						
June, 1916	1,098	1,408	[3] 577	[2]	[4] 1,410	735
June, 1917	1,081	1,370	[3] 643	[2]	[4] 1,582	871
Total—						
June, 1916					7,084	3,587
June, 1917					8,169	4,143
Michigan:						
Battle Creek (State)—						
June, 1916	96	216	238	[2]	108	108
June, 1917	56	106	68	[2]	64	64
Bay City (State)—						
June, 1916	81	294	250	[2]	137	137
June, 1917	47	142	97	[2]	75	75
Detroit (Federal)—						
June, 1916	185	1,522	[1] 1,214	[2]	1,146	1,124
June, 1917	43	294	[1] 289	[2]	289	289
Detroit (State)—						
June, 1916	1,259	5,127	4,994	[2]	4,815	4,815
June, 1917	1,329	6,690	6,643	[2]	6,643	6,643
Flint (State)—						
June, 1916	424	894	798	[2]	798	798
June, 1917	275	675	693	[2]	660	660
Grand Rapids (State)—						
June, 1916	462	1,002	973	[2]	955	955
June, 1917	321	796	794	[2]	780	780
Jackson (State)—						
June, 1916	314	761	728	[2]	721	706
June, 1917	416	908	930	[2]	893	887
Kalamazoo (State)—						
June, 1916	416	437	416	[2]	416	416
June, 1917	168	332	368	[2]	368	368
Lansing (State)—						
June, 1916	67	344	335	[2]	325	325
June, 1917	37	146	160	[2]	141	141
Muskegon (State)—						
June, 1916	47	294	255	[2]	252	252
June, 1917	59	162	161	[2]	144	131
Saginaw (State)—						
June, 1916	158	912	814	[2]	814	814
June, 1917	134	737	564	[2]	564	564
Sault Ste. Marie (Federal)—						
June, 1916	4	98	[1] 110	[2]	90	89
June, 1917	3	83	[1] 81	[2]	71	69
Total—						
June, 1916					10,577	10,539
June, 1917					10,692	10,671

[1] Number applying for work.
[2] Not reported.
[3] Number who were registered.
[4] Number of offers of positions.

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

UNITED STATES—Continued.

State, city, and kind of office.	Applications from employers.	Persons asked for by employers.	Persons applying for work.		Persons referred to positions.	Positions filled.
			New registrations.	Renewals.		
Minnesota:						
Duluth (State)—						
June, 1916	(1)	(1)	(1)	(1)	(1)	1,636
June, 1917	(1)	(1)	(1)	(1)	(1)	1,441
Minneapolis (Federal)—						
June, 1916	74	79	[2] 24	(1)	10	10
June, 1917	12	14	[2] 35	(1)	7	6
St. Paul (State)—						
June, 1916	(1)	(1)	(1)	(1)	(1)	1,292
June, 1917	(1)	(1)	(1)	(1)	(1)	1,135
Total—						
June, 1916					(1)	2,938
June, 1917					(1)	2,582
Mississippi:						
Gulfport (Federal)—						
June, 1916	(1)	(1)	[2] 45	(1)	(1)	(1)
June, 1917	0	0	[2] 59	(1)	0	0
Missouri:						
Kansas City (Federal-State)—						
June, 1916	515	1,249	854	(1)	1,004	724
June, 1917	1,170	2,806	764	3,313	4,077	1,934
St. Joseph (State)—						
June, 1916	(1)	1,709	[2] 1,255	(1)	1,255	1,255
June, 1917	931	1,449	964	327	1,148	1,141
St. Louis (Federal)—						
June, 1916	16	82	[2] 157	(1)	47	39
June, 1917	318	1,819	[2] 918	(1)	826	823
St. Louis (State)—						
June, 1916	(1)	469	[2] 406	(1)	242	242
June, 1917	318	1,819	918	111	826	823
Total—						
June, 1916					2,548	2,260
June, 1917					6,877	4,721
Montana:						
Butte (municipal)—						
June, 1916	466	400	350	(1)	(1)	556
June, 1917	(1)	579	109	(1)	(1)	485
Helena (Federal)—						
June, 1916	(1)	(1)	[2] 6	(1)	(1)	(1)
June, 1917	1	1	[2] 10	(1)	4	0
Nebraska:						
Omaha (Federal-State-county-municipal)—						
June, 1917	891	1,550	889	480	1,220	964
Nevada:						
Reno (Federal)—						
June, 1917	87	629	[2] 500	(1)	410	405
New Mexico:						
Albuquerque (Federal)—						
June, 1916	(1)	(1)	[2] 4	(1)	(1)	(1)
June, 1917	0	0	[2] 4	(1)	2	0
New York:						
Albany (State)—						
June, 1916	526	692	491	202	669	373
June, 1917	688	1,073	776	254	1,089	687
Brooklyn (State)—						
June, 1916	1,467	2,140	1,756	411	2,276	1,375
June, 1917	1,938	2,970	1,692	820	2,951	2,122
Buffalo (Federal)—						
June, 1916	142	1,041	[2] 850	(1)	748	496
June, 1917	1,308	2,110	[2] 1,830	(1)	2,547	(1)

[1] Not reported.

[2] Number applying for work.

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

UNITED STATES—Continued.

State, city, and kind of office.	Applications from employers.	Persons asked for by employers.	Persons applying for work.		Persons referred to positions.	Positions filled.
			New registrations.	Renewals.		
New York—Concluded.						
Buffalo (State)—						
June, 1916	1,026	1,869	1,105	122	1,514	1,139
June, 1917	1,439	2,069	1,629	165	2,492	1,828
New York City (Federal)—						
June, 1916	275	1,496	[1] 1,129	([2])	578	526
June, 1917	3,925	7,022	[1] 8,272	([2])	5,542	5,596
New York City (municipal)—						
June, 1916	2,335	2,666	2,332	([2])	3,367	2,176
June, 1917	2,559	2,838	2,655	2,210	3,728	2,161
Rochester (State)—						
June, 1916	1,118	1,740	900	231	1,511	820
June, 1917	1,653	2,312	1,104	586	2,107	1,163
Syracuse (State)—						
June, 1916	775	914	513	44	826	619
June, 1917	1,446	2,048	1,004	281	1,780	1,339
Total—						
June, 1916					11,480	7,524
June, 1917					22,236	[3] 14,896
Ohio:						
Akron (State-municipal)—						
June, 1916	([2])	1,923	789	1,640	1,690	1,383
June, 1917	([2])	2,597	906	2,150	2,456	2,174
Athens (State-municipal)—						
June, 1917	([2])	88	6	3	7	7
Canton (State-municipal)—						
June, 1917	([2])	524	735	162	532	252
Chillicothe (State-municipal)—						
June, 1917	([2])	1,019	1,116	123	717	596
Cincinnati (State-municipal)—						
June, 1916	([2])	1,660	1,257	2,707	1,515	923
June, 1917	([2])	2,560	1,972	3,284	2,512	1,744
Cleveland (Federal)—						
June, 1916	22	120	[1] 98	1	68	19
June, 1917	32	302	[1] 148	([2])	104	29
Cleveland (State-municipal)—						
June, 1916	([2])	9,095	3,132	8,023	7,588	6,128
June, 1917	([2])	7,971	3,598	8,210	7,371	5,968
Columbus (State-municipal)—						
June, 1916	([2])	2,358	701	2,138	2,053	1,661
June, 1917	([2])	2,971	1,180	2,930	2,743	2,285
Dayton (State-municipal)—						
June, 1916	([2])	1,104	692	1,068	955	836
June, 1917	([2])	1,573	1,143	1,485	1,446	1,222
Hamilton (State-municipal)—						
June, 1917	([2])	118	138	53	106	65
Lima (State-municipal)—						
June, 1917	([2])	458	424	123	388	346
Mansfield (State-municipal)—						
June, 1917	([2])	107	119	43	80	42
Marietta (State-municipal)—						
June, 1917	([2])	233	217	75	230	159
Marion (State-municipal)—						
June, 1917	([2])	392	376	167	343	224
Portsmouth (State-municipal)—						
June, 1917	([2])	361	343	162	241	116
Springfield (State-municipal)—						
June, 1917	([2])	511	444	146	289	137
Steubenville (State-municipal)—						
June, 1917	([2])	509	396	123	472	378
Tiffin (State-municipal)—						
June, 1917	([2])	300	202	80	186	162
Toledo (State-municipal)—						
June, 1916	([2])	3,366	1,370	1,934	2,414	2,075
June, 1917	([2])	3,527	1,632	3,231	3,287	2,778
Washington Courthouse (State-municipal)—						
June, 1917	([2])	193	251	70	169	148

[1] Number applying for work.
[2] Not reported.
[3] Exclusive of Buffalo Federal office, not reported.

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

UNITED STATES—Continued.

State, city, and kind of office.	Applications from employers.	Persons asked for by employers.	Persons applying for work.		Persons referred to positions.	Positions filled.
			New registrations.	Renewals.		
Ohio—Concluded.						
Youngstown (State-municipal)—						
June, 1916	(1)	1,279	711	1,208	1,201	1,044
June, 1917	(1)	1,781	1,050	1,272	1,697	1,503
Zanesville (State-municipal)—						
June, 1917	(1)	188	201	78	192	83
Central office (State-municipal)—						
June, 1917	(1)	46	330	48	48	38
Total—						
June, 1916					(1)	(1)
June, 1917					25,616	20,456
Oklahoma:						
Enid (State)—						
June, 1916	(1)	812	(1)	(1)	(1)	804
June, 1917	233	1,381	[2] 1,283	(1)	1,262	1,256
Muskogee (State)—						
June, 1916	(1)	524	(1)	(1)	(1)	262
June, 1917	333	552	[2] 327	(1)	322	315
Oklahoma City (State)—						
June, 1916	(1)	1,139	(1)	(1)	(1)	769
June, 1917	378	1,077	[2] 699	(1)	684	640
Tulsa (State)—						
June, 1916	(1)	965	(1)	(1)	(1)	928
June, 1917	998	2,022	[2] 1,376	(1)	1,374	1,361
Total—						
June, 1916					(1)	2,763
June, 1917					3,642	3,572
Oregon:						
Astoria (Federal)—						
June, 1917	13	74	[2] 108	(1)	13	12
Portland (Federal)—						
June, 1916	1,035	3,386	[2] 2,197	(1)	3,161	2,874
June, 1917	1,562	4,464	[2] 3,941	(1)	4,442	4,222
Portland (municipal)—						
June, 1917	1,195	3,228	106	(1)	(1)	3,093
Total—						
June, 1916					(1)	(1)
June, 1917					4,455	7,327
Pennsylvania:						
Altoona (State)—						
June, 1916	(1)	172	59	(1)	37	37
June, 1917	11	132	96	17	99	85
Harrisburg (State)—						
June, 1916	(1)	999	425	64	447	440
June, 1917	179	281	222	184	317	298
Johnstown (State)—						
June, 1916	(1)	204	54	10	57	46
June, 1917	76	132	96	17	99	85
Philadelphia (Federal)—						
June, 1916	103	312	[2] 269	(1)	203	167
June, 1917	357	1,665	[2] 827	(1)	718	524
Philadelphia (State)—						
June, 1916	(1)	458	719	257	536	290
June, 1917	506	1,220	1,251	598	1,245	1,072
Pittsburgh (Federal)—						
June, 1916	18	805	[2] 327	(1)	144	130
June, 1917	65	1,250	[2] 404	(1)	269	195
Pittsburgh (State)—						
June, 1916	(1)	1,516	1,163	99	873	806
June, 1917	102	1,440	528	123	571	508
Total—						
June, 1916					2,297	1,916
June, 1917					3,318	2,767
Rhode Island:						
Providence (State)—						
June, 1916	311	359	246	236	359	359
June, 1917	187	213	146	124	(1)	213

[1] Not reported.

[2] Number applying for work.

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

UNITED STATES—Continued.

State, city, and kind of office.	Applications from employers.	Persons asked for by employers.	Persons applying for work.		Persons referred to positions.	Positions filled.
			New registrations.	Renewals.		
South Carolina:						
Charleston (Federal)—						
June, 1916	6	303	[1] 106	[2]	132	132
June, 1917	1	1,200	[1] 187	[2]	368	368
Tennessee:						
Memphis (Federal)—						
June, 1916	5	60	[1] 35	[2]	3	[2]
June, 1917	4	8	[1] 62	[2]	10	9
Texas:						
Dallas (municipal)—						
June, 1916	74	8	74	8	289	289
June, 1917	170	316	[3] 258	15	373	307
Fort Worth (municipal)—						
June, 1916	177	637	372	55	341	332
June, 1917	181	495	[4] 1,170	21	384	370
Galveston (Federal)—						
June, 1916	4	303	[1] 31	[2]	22	4
June, 1917	5	14	[1] 40	[2]	40	26
Houston (Federal)—						
June, 1916	3	5	[1] 21	[2]	3	3
June, 1917	0	0	[1] 23	[2]	0	0
Total—						
June, 1916					655	628
June, 1917					797	703
Virginia:						
Norfolk (Federal)—						
June, 1916	19	307	[1] 102	[2]	34	21
June, 1917	18	444	[1] 136	[2]	97	44
Richmond (municipal)—						
June, 1916	210	542	851	[2]	729	320
June, 1917	297	449	545	[2]	577	225
Total—						
June, 1916					763	341
June, 1917					674	269
Washington:						
Aberdeen (Federal)—						
June, 1916	11	61	[1] 387	[2]	61	61
June, 1917	10	38	[1] 77	[2]	38	38
Bellingham (Federal-municipal)—						
June, 1916	158	288	[1] 294	[2]	275	255
June, 1917	136	279	[1] 262	[2]	230	198
Everett (Federal)—						
June, 1916	4	7	[1] 24	[2]	7	7
June, 1917	2	40	[1] 38	[2]	191	18
Everett (municipal)—						
June, 1916	[2]	[2]	[2]	[2]	[2]	402
June, 1917	[2]	432	[2]	[2]	[2]	325
Kennewick (Federal)—						
June, 1917	50	238	[1] 300	[2]	240	233
North Yakima (Federal)—						
June, 1916	431	711	[1] 931	[2]	564	546
June, 1917	517	1,094	[1] 1,692	[2]	968	901
Seattle (Federal)—						
June, 1916	156	289	[1] 816	[2]	273	246
June, 1917	188	807	[1] 1,848	[2]	438	400
Seattle (municipal)—						
June, 1916	3,201	5,922	[2]	[2]	5,904	5,417
June, 1917	4,224	7,754	[2]	[2]	7,890	7,177
Spokane (Federal)—						
June, 1916	51	330	[1] 246	[2]	175	175
June, 1917	80	208	[1] 247	[2]	189	187
Spokane (municipal)—						
June, 1916	1,890	2,862	[2]	[2]	2,430	2,426
June, 1917	1,972	2,560	[2]	[2]	2,420	2,364
Tacoma (Federal-municipal)—						
June, 1916	554	1,088	[1] 1,047	[2]	1,080	1,080
June, 1917	541	1,181	[1] 1,939	[2]	891	850
Walla Walla (Federal)—						
June, 1916	122	216	[1] 325	[2]	220	212
June, 1917	295	425	[1] 600	[2]	376	335
Total—						
June, 1916					[5] 10,989	10,827
June, 1917					[5] 13,871	13,026

[1] Number applying for work.
[2] Not reported.
[3] Includes 84 transient applicants.
[4] Includes 768 unwritten applications.
[5] Exclusive of Everett municipal office, not reported.

OPERATIONS OF PUBLIC EMPLOYMENT OFFICES, 1916 AND 1917—Concluded.

UNITED STATES—Concluded.

State, city, and kind of office.	Applications from employers.	Persons asked for by employers.	Persons applying for work.		Persons referred to positions.	Positions filled.
			New registrations.	Renewals.		
Wisconsin:						
La Crosse (State)—						
June, 1916	171	242	273	(1)	202	138
June, 1917	131	305	274	(1)	179	134
Milwaukee (State)—						
June, 1916	2,016	3,528	2,718	(1)	2,903	1,868
June, 1917	2,112	4 289	4,064	(1)	4,136	2,864
Oshkosh (State)—						
June, 1916	136	164	199	(1)	136	94
June, 1917	36	187	231	(1)	151	110
Superior (State)—						
June, 1916	442	1,363	1,161	(1)	1,216	888
June, 1917	496	1,363	1,032	(1)	1,183	667
Total—						
June, 1916					4,457	2,988
June, 1917					5,649	3,775
CANADA.						
Quebec:						
Montreal (provincial)—						
June, 1917	288	843	[2] 404	(1)	480	410

[1] Not reported. [2] Number applying for work.

STREET RAILWAY WAGES AND WORKING CONDITIONS.

An extended report on the street railway employment in the United States is now in press and will soon be issued as Bulletin No. 204 of the United States Bureau of Labor Statistics.

This report comprises a study, by special agents of the bureau, of 101 companies in 81 representative cities of the United States, and also data collected by correspondence covering over 300 companies, most of which were in smaller cities than those visited by the agents. The reports of the special agents show that in the 81 cities visited 10 per cent of the regular motormen on surface street railway lines in the larger cities of the United States in 1914 earned under 24 cents per hour, 24 per cent earned under 26 cents, 43 per cent under 28 cents, 61 per cent under 30 cents, 85 per cent under 32 cents, and 98 per cent under 34 cents.

Nearly all companies have a sliding scale of wages for motormen and conductors, based on length of service. The annual increase generally is about 1 cent an hour, and some companies continue such increases for 10 or more years.

As a rule, conductors are paid the same rate of wages as the motormen. The years of service for conductors, however, do not average so high as for motormen. Of the regular conductors working

for the 101 companies specially studied, 13 per cent earned under 24 cents per hour, 33 per cent earned under 26 cents, 51 per cent under 28 cents, 67 per cent under 30 cents, 88 per cent under 32 cents, and 99 per cent under 34 cents.

"Extra" motormen and conductors are those having no regular runs, and generally are men new in service who take the place of regular men who are absent, or take such irregular service as the company may have to offer. Their wage rates are lower than the rates of regular men who have been in service a longer time.

The wage rates of both groups of cities were classified in 1 cent groups. The median rates in the cities visited by the bureau's agents were found to be as follows:

Motormen, regular surface, 28 and under 29 cents per hour.
Motormen, extra, surface, 25 and under 26 cents per hour.
Motormen, regular, elevated and subway, 35 and under 36 cents per hour.
Motormen, extra, elevated and subway, 30 and under 31 cents per hour.
Conductors, regular, surface, 27 and under 28 cents per hour.
Conductors, extra, surface, 24 and under 25 cents per hour.
Conductors, regular, elevated and subway, 26 and under 27 cents per hour.
Conductors, extra, elevated and subway, 25 and under 26 cents per hour.
Gripmen, regular, surface, 31 and under 32 cents per hour.
Gripmen, extra, surface, 25 and under 26 cents per hour.
Guards, regular, elevated and subway, 23 and under 24 cents per hour.
Guards, extra, elevated and subway, 21 and under 22 cents per hour.

In the group of cities for which data were obtained by correspondence the median rates were:

Motormen, regular and extra, surface, 25 and under 26 cents per hour.
Conductors, regular and extra, surface, 25 and under 26 cents per hour.

In this second group the regular and extra men were not reported separately.

Some companies pay certain men for more hours than they actually worked. This applies mainly to men working short hours, and is necessary to make the positions acceptable to the men.

In addition to the constant desire, if not demand, for a higher wage rate, the extra man complains of the irregularity and uncertainty of the work given him and the length of time he must wait to get a regular run. A few companies guarantee a minimum earning to their extra trainmen. The chief complaint of the regular man is the length of service required per day, and more especially the long hours over which the work may be spread by one or more periods off duty in his day's work.

One of the great problems that confronts the street railway company is so to arrange its car service as to accommodate the variation in traffic from hour to hour and from day to day. To meet the demands of the public the company must run a different number of

cars at different hours of the day. At the same time the manager must consider the call of his stockholders for dividends, which necessitates keeping down the number of cars in service.

A regular run is a regular established scheduled day's work, assigned to a regular man, which he is expected to make day after day regularly. The schedule frequently varies on Saturday and more often on Sunday. Of a total of 30,438 Monday to Friday regular runs on surface lines, 3 per cent were runs of under 8 hours on duty, 5 per cent of 8 and under 8½ hours, 11 per cent of 8½ and under 9 hours, 19 per cent of 9 and under 9½ hours, 23 per cent of 9½ and under 10 hours, 22 per cent of 10 and under 10½ hours, 9 per cent of 10½ and under 11 hours, 4 per cent of 11 and under 11½ hours, 2 per cent of 11½ and under 12 hours, and 2 per cent of 12 hours or over.

Because of the breaks (times off duty) in the day's work the time between the beginning and the ending of the day's work frequently far exceeds the time on duty. In the same 30,438 regular Monday to Friday runs on surface lines, the outside time of 1 per cent of the runs was 8 and under 8½ hours; of 3 per cent, 8½ and under 9 hours; of 6 per cent, 9 and under 9½ hours; of 7 per cent, 9½ and under 10 hours; of 7 per cent, 10 and under 10½ hours; of 5 per cent, 10½ and under 11 hours; of 6 per cent, 11 and under 11½ hours; of 8 per cent, 11½ and under 12 hours; of 10 per cent, 12 and under 12½ hours; of 10 per cent, 12½ and under 13 hours; of 10 per cent, 13 and under 13½ hours; of 11 per cent, 13½ and under 14 hours; of 5 per cent, 14 and under 14½ hours; of 3 per cent, 14½ and under 15 hours; and of 7 per cent of the runs, 15 hours or over. In 1 per cent of all runs the outside time was 18 hours and over.

Street railway operation as an industry knows no rest day. The roads are in operation seven days a week. Individual employees do not all work every day, however, but are absent because of one cause or another. Occasionally a road makes provision for regular days off, but the general rule is that men are allowed time off duty on request. Out of a total of 31,166 regular motormen, including 43 horse-car drivers for whom information is available, 15,281, or 49 per cent, worked seven days in the week. Of 9,294 extra motormen, including 4 horse-car drivers, 4,295, or 46 per cent, worked seven days in the week. The report also shows similar figures for conductors and guards.

An important factor bearing much on efficiency is the change in the labor force during the year, commonly known as the "turnover." The change in personnel varies materially in different companies. Of 96 companies reporting the per cent of turnover of motormen, the turnover was under 10 per cent in 13 companies, 10 and under

20 per cent in 19 companies, 20 and under 30 per cent in 15 companies, 30 and under 40 per cent in 13 companies, 40 and under 50 per cent in 14 companies, 50 and under 70 per cent in 11 companies, 70 and under 100 per cent in 6 companies, and in 5 companies it was 100 per cent or over. The turnover for conductors was even greater; in 12 out of 96 companies it was 100 per cent or over.

In many companies applicants for positions must pass a physical examination, often quite as rigid as that required for life insurance. From this extreme requirement there is a decline to the other extreme, which consists of a simple eye test.

The prevailing minimum age requirement for entrance is 21 years, although some companies take on men of lower age. Inexperienced men, who are old or even middle aged, can not get positions as motormen and conductors. The maximum entrance age varies from 28 years, allowed by one company, to 50 years, allowed by four companies.

All motormen and conductors must pass the probationary learners' period, ranging from 7 days to 2 months. From 10 to 15 days' experience is the prevailing time required for a man to learn his job sufficiently to be given charge of a car.

Generally, motormen and conductors are allowed to have seats, although the provision is far from universal. Inclosed or partly inclosed vestibules are now provided by most companies.

CONCILIATION WORK OF THE DEPARTMENT OF LABOR, JUNE 16 TO JULY 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 June 16 and July 15, 1917, in 72 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 THE DEPARTMENT OF LABOR, THROUGH ITS COMMISSIONERS OF CONCILIATION, JUNE 15 TO JULY 15, 1917.

Name.	Workmen affected—		Result.
	Directly.	Indirectly.	
Strike, Dentists' Supply Co., York, Pa	500	1,000	Pending.
Controversy, Southern R. R. Co. and its maintenance of way employees.	250	3,000	Adjusted.
Strike, Gulf Refining Co., Port Arthur, Tex	500	2,200	Do.
Strike, Texas Oil & Refining Co., Port Arthur, Tex	75	605	Unable to adjust.
Strike, International Smelting & Refining Co., Tooele, Utah	1,000	15,000	Adjusted.
Threatened strike of all trades, Monon Route, Lafayette, Ind.	500	[1]	Do.
Strike of drop forge employees, The Vichek Tool Co., Cleveland, Ohio.	75	200	Do.
Strike of drop forge employees, Champion Machine & Forging Co., Cleveland, Ohio.	300	.....	Do.
Strike of drop forge employees, Columbian Hardware Co, Cleveland, Ohio.	60	290	Do.
Controversy between International & Great Northern Ry. Co. and its shopmen, Houston, Tex.	1,212	.....	Pending.
Strike at the plants of the United Alloy Steel Co., Gilliam Manufacturing Co., Arctic Ice Machine Co., Canton, Ohio.	.....	.....	Do.
Controversy between Cincinnati, Hamilton & Dayton R. R. Co. and its shop crafts.	.....	.....	Do.
Threatened strike of printers, Springfield, Mass	.....	.....	Unable to adjust.
Labor dispute between electrical workers and miners, Butte, Mont.	.....	.....	Pending.
Threatened strike of freight handlers, Chicago	.....	.....	Adjusted.
Threatened strike of shopmen, Boston & Maine Railroad, Boston, Mass.	.....	.....	Do.
Controversy between General Electric Co. and its electrical workers, Pittsfield, Mass.	7,200	.....	Pending.
Threatened strike, Dayton Street Ry. Co., Dayton, Ohio	67	.....	Adjusted.
Lockout of carpenters, Roanoke, Va	200	.....	Unable to adjust.
Strike, Washington Iron Works, Seattle, Wash	.....	.....	Pending.
Threatened strike of electrical workers, Atlanta, Ga	.....	.....	Do.
Strike of machinists, pattern makers, and engineers, Addressograph Co., Chicago, Ill.	210	400	Do.
Threatened strike of carmen, electricians, etc., Washington Terminal Co., Washington, D. C.	500	.....	Do.
Threatened strike, Ostby & Barton, Providence, R. I	.....	.....	Do.
Strike of retail clerks, Memphis, Tenn	3,000	.....	Adjusted.
Threatened strike, Schaum & Uhlinger, Philadelphia	.....	.....	Pending.
Strike of riveters, chippers, holders on heater, and passer boys, Wm. Cramp & Sons, Philadelphia.	.....	.....	Adjusted.
General strike of molders, Penn Plant, Seaboard Plant, American Plant, Atlantic Plant, Eagan Rogers, Chester Plant, and Federal Plant, Chester, Pa.	.....	.....	Pending.
Strike of copper miners, Arizona	.....	.....	Do.
Controversy between Bell Telephone Co. and its operators, Aberdeen, Wash.	.....	.....	Adjusted.
Threatened strike, Smith Mills, Marshfield, Oreg	.....	.....	Unable to adjust
Controversy between the Great Northern Ry. and its maintenance of way employees, St. Paul, Minn.	.....	.....	Pending.
Strike of shopmen, Maine Central R. R	.....	.....	Do.
Strike of molders and core makers, Marion, Ind	.....	.....	Do.
Strike of carpenters, West Virginia Pulp & Paper Co., Piedmont, W. Va.	33	None.	Unable to adjust.
Strike at jewelry works, Goldsmith, Stern & Co., New York	.....	.....	Pending.
Controversy between Chattanooga Ry. & Light Co. and its employees, Chattanooga, Tenn.	.....	.....	Adjusted.
Strike of raincoat makers, Kling Bros., Rosenwald & Weil, Chicago Raincoat Co., Chicago, Ill.	45	.....	Unable to adjust.
Threatened strike, American British Manufacturing Co., Bridgeport, Conn.	.....	.....	Adjusted.
Strike at Hazard Works, Wilkes-Barre, Pa	.....	.....	Do.
Controversy between Spreckels Bros. Commercial Co. and Longshoremen's Union, San Diego, Cal.	.....	.....	Do.
Threatened strike of coal handlers at piers, New York and vicinity.	.....	.....	Do.
Threatened strike of chippers, calkers, and riveters, Charleston Navy Yard, Charleston, S. C.	.....	.....	Pending.
Controversy between New York Boat Owners' Association and employees, New York Harbor.	.....	.....	Do.
Threatened strike of shopmen and other employees, Central of New Jersey R. R.	.....	.....	Do.
Threatened strike of boiler makers and helpers, Big Four Route, Indianapolis, Ind.	.....	.....	Do.
Controversy, James McKay Co., McKees Rocks, Pa	.....	.....	Adjusted.

[1] All other employees.

STATEMENT SHOWING NUMBER OF LABOR DISPUTES HANDLED BY THE DEPARTMENT OF LABOR, THROUGH ITS COMMISSIONERS OF CONCILIATION, JUNE 15 TO JULY 15, 1917.

Name.	Workmen affected—		Result.
	Directly.	Indirectly.	
Controversy between Hercules Powder Co. and its electrical workers, Chula Vista, Cal.	.....	.....	Adjusted.
Strike at refinery of International Nickel Co., Bayonne, N. J.	.....	.....	Do.
Strike of maintenance of way employees of Mississippi River & Bonne Terre R. R.	4,000	.....	Pending.
Strike, Raleigh Coal Co., Beckley, W. Va.	530	.....	Adjusted.
Strike of coal miners, Victor American Coal Co., Gallup, N. Mex.	.....	.....	Pending.
Controversy, Waist, Suit, and Children's Dressmakers' Union, Philadelphia.	.....	.....	Do.
Strike of miners, Kennecott Copper Co., Kennecott, Alaska.	.....	.....	Do.
Threatened strike of carmen, Chicago, Indianapolis & Louisville Ry., La Fayette, Ind.	.....	.....	Do.
Strike, Niles Tool Works, Hamilton, Ohio.	115	1,185	Do.
Strike of miners, Leadville, Colo.	.....	.....	Do.
Strike of mine workers, Madeira Hill Coal Mining Co., Houtzdale, Pa.	.....	.....	Do.
Controversy between Pacific Coast Steel Co. and its employees, Seattle, Wash.	.....	.....	Do.
Strikes affecting fruit growing and other industries in State of Washington.	.....	.....	Do.
Threatened strike of machinists, Metal Produce Co., Beaver Falls, Pa.	.....	.....	Do.
Strike, East Iron & Machine Co., Lima, Ohio.	.....	.....	Do.
Controversy between Kansas coal miners and operators.	.....	.....	Do.
Controversy between Banning Co. and Longshoremen's Union, San Pedro, Cal.	.....	.....	Do.
Strike, 5 mines, Madeira Hill, including Hyde City operation, Cassidy Coal Co., Curwensville operation, Clearfield Colliery Co., Pyramid Coal Co., Bickford Coal Co., Pa.	.....	.....	Do.
Lockout, National Lead & Steel Package Co., Granite City, Ill.	.....	.....	Do.
Controversy between Nevada Consolidated Copper Co. and employees, Ely, Nev.	.....	.....	Do.
Strike of marine engineers, Buffalo, N. Y.	.....	.....	Do.
Strike, Champion Paper Co. and Woolen Mill, Hamilton, Ohio.	.....	.....	Do.
Controversy between Michigan Central R. R. and machinists, Jackson, Mich.	.....	.....	Do.
Strike of molders, Norfolk Navy Yard, Norfolk, Va.	.....	.....	Do.
Controversy between Rock Island R. R. and its shopmen.	.....	.....	Do.

The following cases have been disposed of:

Controversy, Simmons Saddlery Co., St. Louis, Mo. Adjusted.

Lockout, building trades, Omaha, Nebr. Unable to adjust.

Threatened strike of clerks, Pere Marquette Railroad. Adjusted.

Lockout, car department employees, Missouri, Oklahoma & Gulf Railroad, Muskogee, Okla. Adjusted.

Controversy between Wabash Railroad and its federated crafts, Decatur, Ill. Adjusted before arrival of commissioner.

Lockout, Adrian Furnace Co., Punxsutawney and Dubois, Pa. Adjusted.

Strike, Peale Mines, Nos. 2, 4, and 5, Portage, Pa. Adjusted.

Controversy between Pennsylvania Railroad Co. and engine hoist employees, Schuylkill division. Adjusted.

General strike, Lever branch of lace industry (E. & Z. Van Raalte & Co.). Adjusted.

IMMIGRATION IN MAY, 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. There was also an increase from month to month during 7 of the 12 months in 1916. During the current year the figures for the first three months show a considerable decrease from month to month. 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. 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	[1] 19.9
February	59,156	46,873	13,873	21,740	19,238	[1] 22.3
March	96,958	92,621	19,263	27,586	15,512	[1] 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	[1] 48.9
June	176,261	71,728	22,598	30,764	.....	.....
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 May, 1916 and 1917, was as follows:

IMMIGRANT ALIENS ADMITTED TO AND EMIGRANT ALIENS DEPARTING FROM THE UNITED STATES, MAY, 1916 AND 1917.

Race.	Admitted.		Departed.	
	May, 1916.	May, 1917.	May, 1916.	May, 1917.
African (black)	1,005	956	177	135
Armenian	144	65	72	10
Bohemian and Moravian	36	9	1	17
Bulgarian, Servian, Montenegrin	218	33	9	25
Chinese	191	137	43	163
Croatian and Slovenian	48	11	1	6
Cuban	322	174	91	114
Dalmatian, Bosnian, Herzegovinian	13	1	.....	1
Dutch and Flemish	747	281	75	122
East Indian	4	2	1	4
English	3,236	866	602	452
Finnish	623	196	49	95
French	2,141	392	235	142
German	1,091	251	65	86
Greek	3,782	274	261	61
Hebrew	1,070	814	4	19
Irish	1,384	344	169	72
Italian (north)	427	145	315	107
Italian (south)	3,780	272	398	581
Japanese	643	820	48	93
Korean	32	23	1	.....
Lithuanian	53	16	.....	2
Magyar	56	17	29	54
Mexican	1,531	89	32	57
Pacific Islander	2	.....	2	.....
Polish	492	121	19	17
Portuguese	680	890	29	109
Roumanian	82	16	10	10
Russian	348	71	569	591
Ruthinian (Russniak)	122	32	.....	1
Scandinavian	2,523	1,055	540	397
Scotch	1,250	360	137	112
Slovak	23	26	8	1
Spanish	1,813	1,338	114	359
Spanish-American	205	192	34	97
Syrian	89	19	9	17
Turkish	59	7	2	10
Welsh	93	14	11	13
West Indian (except Cuban)	144	109	55	56
Other peoples	519	49	46	9
Not specified	.....	.....	970	1,245
Total	31,021	10,487	5,233	5,462

EYE INJURIES AND DISEASES, WITH SPECIAL REFERENCE TO EYESTRAIN.

[AN ANNOTATED LIST OF REFERENCES TO BOOKS AND PERIODICALS.]

Agnew, C. R. A preliminary analysis of 1,060 cases of asthenopia.[1] New York, 1877. 12 pp. With occupation tables for men and women afflicted with this eye disease.

Alger, E. M. Illumination and eyestrain:[1] Iron Trade Review, March 27, 1913. Vol. 52, pp. 743, 744.

Alger, Ellice M. Occupational eye diseases: American Labor Legislation Review, June, 1912. Vol. 2, pp. 223–230. American Photo Engraver, April, May, 1914. Vol. 6, pp. 152–154, 188–190. (Same data.)

American Medical Association. Committee on conservation of vision. Pamphlets.

No. 2: Industrial and household accidents to the eye, by Harold Gifford. 1914. 11 pp.

No. 4: The relation of illumination to visual efficiency, by E. M. Alger. 1914. 18 pp.

No. 7: Eye-strain, by Hiram Woods. 1914. 12 pp. (Deals principally with eyestrain in children.)

No. 13: Usual and unusual eye accidents, by E. C. Ellett. 1914. 6 pp.

No. 14: Visual requirements of transportation employees, by J. J. Carroll. 1914. 14 pp.

No. 20: Blindness from wood alcohol. 1914. 15 pp.

American Thermo-Ware Co., N. Y. Eye protectors and respirating devices. 24 pp. Advertising pamphlet.

Arlidge, J. T. Hygiene, diseases, and mortality of occupations. London, 1892. 568 pp. Eye-strain, pp. 547, 548. (Brief, rather general statement of occupations in which eyestrain is prevalent.)

Ashworth, J. Cause of miners' nystagmus:[1] Coal Age, Sept. 30, 1916. Vol. 10, p. 553.

Banister, J. M. Rifle practice in its relation to eyestrain.[1] Amer. J. M. Sc. Philadelphia, 1983. n. s. cvi, pp. 552–567. Also reprinted.

Barnet, H. N. Accidental injuries to workmen. London, 1909. 376 pp. Injuries to the eye. pp. 200–220.

Baskerville, Charles. Wood alcohol. 1912. 121 pp. "A report on the chemistry, technology, and pharmacology of and the legislation pertaining to methyl alcohol."

Beaumont, W. M. Injuries of the eyes of the employed and the workmen's compensation act. London, Lewis, 1907. 160 pp.

Beyer, D. S. Industrial accident prevention. 1916. 421 pp. Eye injuries in chemical works. pp. 281, 282. (Brief cautions and rules for workers in chemical industries.)

Black, N. M. The eye in industrial accidents. Madison, Wis., 1916. 27 pp. (Bulletin of the University of Wisconsin. General information and welfare series.) Accidents and their prevention.

—— Physiology of the eye and its relation to railway signaling.[1] Illuminating Engineering Society Transactions. Vol. 9, 1914. pp. 425–444.

[1] Not in library of Department of Labor.

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OFFICIAL PUBLICATIONS RELATING TO LABOR.

UNITED STATES.

ILLINOIS.—*Pension Laws Commission. Report, 1916. Springfield, 1917. 310 pp.*

This report is noted on pages 145 to 148 of this issue of the MONTHLY REVIEW.

MASSACHUSETTS.—*Bureau of Statistics. Thirtieth annual report on the Statistics of Manufactures for the year 1915. Boston, 1917. 130 pp.*

This report covers returns from 9,707 establishments, the total product manufactured by them being valued at $1,692,445,366, or an increase of $51,072,319 (3.1 per cent) over 1914. Wages paid to an average of 596,348 wage earners amounted to $346,243,472, or an increase of 1.4 per cent in the amount paid and a decrease of 1.7 in the number of wage earners as compared with 1914. Tables are presented showing the average number of wage earners from month to month and classified weekly wages. Taking all industries as a whole, it is noted that for adult males 6.4 per cent were paid rates less than $8 per week, 54.7 per cent were paid rates from $8 to $15, and 38.9 per cent were paid $15 and over; of adult females, 34.5 per cent were paid rates less than $8, 61 per cent were paid rates ranging from $8 to $15, and 4.5 per cent were enrolled in the classes ranging from $15 up. In 1914 the per cent of females working at the above rates were, respectively, 36.9, 58.8, and 4.3, indicating a movement from the low into the medium wage groups.

——*State Board of Conciliation and Arbitration. Annual report for the year ending December 31, 1916. Public document No. 40. Boston, 1917. 259 pp.*

In 1916 the board made 118 arbitration awards in response to 134 joint applications of employers and workers, some of the cases being grouped in single investigations. Forty other joint applications for arbitration resulted in mutual settlements pursuant to the board's advice. Thirty normality certificates, determining that the business enterprises represented by 32 petitions were all conducted in a normal and usual manner and to the normal and usual extent, were issued, and at the close of the year 33 submissions were under consideration, making a total of 239 formal demands for the board's services during the year. The report states that the board mediated of its own motion in 97 controversies, 7 of which were investigated with publicity. Practically the entire report is devoted to a statement of the individual cases passed upon by the board.

NEW JERSEY.—*Department of Labor. Bureau of Hygiene and Sanitation. Instructions for the inspection of plants where aniline is produced or handled. 6 pp. Safety standards for lead corroders, and lead oxidizers, paint grinders, dry color manufacture. 28 pp. Safety standards for the manufacture of nitro and amido compounds. 18 pp. Trenton, 1917. Sanitary and engineering industrial standards. 36 pp. Union Hill, 1917.*

NEW YORK.—*Department of Labor. Industrial commission. Dangers in manufacture of paris green and Scheele's green. Special bulletin No. 83, July, 1917. Albany, 1917. 17 pp. Illustrated.*

This is an official print, with slight modifications and editorial changes, of the report reproduced on pages 78 to 83 of this issue of the MONTHLY REVIEW.

OHIO.—*Industrial Commission. Department of Investigation and Statistics. Report No. 26. Inspection of workshops, factories, and public buildings in Ohio, 1915. Springfield, 1916. 163 pp.*

Notes that during the year ending December 31, 1915, 16,999 separate establishments were visited, 19,458 inspections were made, and 8,108 orders were issued covering 21,953 distinct requirements. On April 30, 1916, 9,732 re-

quirements were reported complied with and 10,281 were not reported on. It was found that 85 establishments were employing boys under 15 and girls under 16 years of age, in violation of law, and that 253 establishments were employing boys between 15 and 16 and girls between 16 and 18 without school certificates. The orders issued affecting children, minors, and women numbered 2,038.

OHIO.—*Industrial Commission. Department of Investigation and Statistics. Report No. 30. Union scale of wages and hours of labor in Ohio on May 15, 1916. Columbus, 1917. 72 pp.*

The data in this report covers cities having a population of 25,000 or more. The organized trades, with an approximate membership of 92,000, are grouped under seven heads, and the scales from which the figures were compiled were all those under which men were working on a time basis. The tables show the regular rate per hour, the overtime rate, the Sunday and holiday rate, the hours per full day, the hours per short day, and the hours per week. It is noted that wage increases were general since the preceding report, and that they were accomplished, in many cases, by reductions in hours worked. Approximately 53,000 of the 92,000 trade-union members, or more than half of those reported upon, were benefited by these changes.

TEXAS (DALLAS).—*Department of Public Welfare. Second annual report, 1916–17. [Dallas, 1917] 48 pp.*

In the year ending April 30, 1917, the department secured employment for of the Department of Public Health, namely, the free municipal employment bureau, the free legal aid bureau, supervision of commercialized amusements, court sergeant and parole officer, and the municipal lodging house. To show that the department is accomplishing a constructive social service, the fact is cited that in 1916 only 280 delinquent boys and girls were brought before the juvenile court, as compared with 401 in 1915 and 443 in 1914, and this notwithstanding an increase of 10 per cent in the population.

In the year ending April 30, 1917, the Department secured employment for 4,452 men and women, as compared with 2,678 in 1916 (an increase of 66.2 per cent), this service being rendered at no expense to employers or applicants. Approximately 64 per cent of those placed were laborers, the next largest number (7.1 per cent) being carpenters. It is noted that the cost per job secured in 1916 was 62 cents and in 1917, 34 cents.

The wages and period of employment is fairly accurately known and with this knowledge a conservative estimate of wages earned from employment secured through the free bureau is made. Commercial employment agencies charge fees of $1, $2, or 10 per cent of first month's wages. Averaging an agency fee of $2, the saving in fees to the 4,452 jobs would be $8,904.

It is estimated that the jobs secured represent a total of $90,281.90 in wages, which, added to the $8,904 saved in agency fees, makes a total of $99,185.90 as the money saving rendered by the bureau.

The free legal aid bureau, in the year ending April 30, 1917, collected $3,889.63 in wages due, an increase of 310 per cent over 1916. The number of cases handled was 476 (258 in 1916) and the cost of collection per case was $1.64.

The report contains a brief of the findings of the Dallas wage commission as noted in the MONTHLY REVIEW for July, 1917 (pp. 136 and 137).

Reference is made to the widows' pension bill passed by the legislature, comment being made upon its alleged incompleteness and ambiguities. What are considered its deficiencies are specifically noted.

WASHINGTON (SEATTLE).—*Public employment office. Twenty-third annual report, 1916. Seattle, 1916. 16 pp.*

According to this report for the year ending December 1, 1916, the public employment office of Seattle, the first of its kind established (1894) in the United States, supplied jobs to 47,995 men and 6,905 women at an expense of $5,857.07 or 10.7 cents for each person placed. As compared with the preceding year these figures are an increase of 173.1 per cent in the number of males placed, 15.8 per cent in the number of females placed, 31.7 per cent in the total cost, and a decrease of 43.5 per cent in the cost of each position. In 1916 over 60,000 persons were called for while, as noted above, 54,900 positions were filled. Aside from the large number of laborers placed, 14,045, or 29.3 per cent of the total males, positions were obtained for 7,297 warehouse men (15.2 per cent), 3,173 lumber mill men (6.6 per cent), and 2,559 housemen (5.3 per cent), 2,042 coal and wood handlers (4.3 per cent), 1,915 kitchen helpers (4 per cent), 1,539 concrete men (3.2 per cent), and 1,451 farm hands (3 per cent). The women's department received 10,645 orders for help, sent 10,585 applicants to employers for interviews, and succeeded in placing 6,905 in positions. The largest number of women, 2,772 or 40.1 per cent, were placed in jobs as day workers, while 1,959, or 28.4 per cent, were given positions as house workers. The report comments upon the difficulty in filling positions as house workers because of "unreasonable specifications of particular wants from both parties involved."

The most difficult problem confronting our department in the past year was the lack of general house workers in sufficient numbers to enable us to satisfactorily fill all orders received, notwithstanding the fact that in this time wages have increased on an average of from 20 per cent to 25 per cent over that of the preceding year. In the several years past we have been able to fill approximately 65 per cent of general housework orders, whereas during the past year this percentage was reduced to 45.3 per cent in this one class alone. * * * Long hours and lack of freedom incidental to this class of work constitute in the main the principal objections by the workers.

UNITED STATES.—*Department of Commerce. Bureau of the Census. Mortality Statistics, 1915. Sixteenth annual report. Washington, 1917. 707 pp.*

Gives a record of 909,155 deaths in the registration area of the United States, the registration area embracing 67.1 per cent of the total estimated population of the country. The death rate was 13.5 per 1,000, which is stated to be the lowest for any year since the establishment of the registration area in 1880. In 1914 the death rate was 13.6, the lowest up to that time. No separate detailed statistics are presented for occupational diseases, but 155 cases of chronic lead poisoning are listed, an increase of 4 per cent over 1914, and 10 cases of other occupational poisoning are noted, the same as recorded for 1914. Anthrax is given as the cause of 35 deaths in the registration area in 1915, as against 19 deaths in 1914. These cases were distributed as follows: Thirteen in New York; 4 each in Massachusetts and Pennsylvania; 3 in Connecticut; 2 each in California, Minnesota, and New Jersey; and 1 each in Colorado, Indiana, Montana, Utah, and Louisiana.

—— —— *Bureau of Standards. Technological paper, No. 93. Glasses for protecting the eyes from injurious radiations, by W. W. Coblentz and W. B. Emerson. Washington, May 5, 1917. 14 pp.*

This pamphlet is noted on pages 86 and 87 of this issue of the MONTHLY REVIEW.

UNITED STATES.—*Department of the Interior. Bureau of Mines. Carbon monoxide poisoning in the steel industry, by J. A. Watkins. Technological paper, No. 156. Washington, 1917. 19 pp.*

This report is noted on pages 76 to 78 of this issue of the MONTHLY REVIEW.

——— *Organizing and conducting safety work in mines, by Herbert M. Wilson and James R. Fleming. Technical Paper 103. Washington, 1917. 57 pp.*

This pamphlet is noted on pages 88 to 90 of this issue of the MONTHLY REVIEW.

——— *The mining industry in the Territory of Alaska during the calendar year 1915, by Sumner S. Smith. Washington, 1917. 65 pp.*

This report of the United States mine inspector for Alaska reviews the general mining conditions in the Territory and notes the fact that labor in 1915 was considerably in excess of the demand, owing to the large influx of men seeking employment on the Government railroad and the prospect of coal areas being opened for leasing.

The eight-hour law, which went into effect at the middle of the season, threatened to cause considerable trouble, as many operators continued paying the same hourly schedule, thus reducing wages $1 a day, as the men up to that time had been receiving $5 a day and board for a 10-hour shift. Small strikes at several of the interior camps resulted in compromises. At Nome most of the operators continued paying $5 a day and board, though they cut the hours from 10 to 8. Some of the operators continued at one rate and some at another, and others suspended mining altogether. At Fairbanks the men struck, and a compromise was effected, the men going back to work on the 10-hour basis. The operators granted an increase of 50 cents a day, so that the men get $5.50 a day and board. This arrangement was in open violation of the Territorial law, but no official has been appointed to inforce the law and there have been no prosecutions for its violation.

It is stated, however, that the scale of wages was practically the same as in 1914, miners on the coast receiving $3 to $4 a day and boarding themselves and those in the interior and on the Seward Peninsula receiving $4 to $6 per day and board. On the dredges the scale is from 50 to 75 cents an hour and board.

Considerable increase of interest in first aid and mine rescue training is noted, and in one mine a safety engineer has been appointed, the company issuing a quarterly magazine giving articles on safety and lists of accidents. A book of safety rules has also been published for the use of the miners.

According to the report, between 7,000 and 8,000 persons are employed in and about mines, quarries, and dredges in the Territory, about 50 per cent of whom are in the lode mines. The following accident statistics are compiled from the report:

NUMBER OF FATAL AND NONFATAL ACCIDENTS IN MINING OPERATIONS IN ALASKA IN 1915, SHOWING FOR EACH GROUP THE ACCIDENT RATE PER 1,000 EMPLOYEES.

Type of mine.	Number of employees.	Accidents.					
		Fatal.	Rate per 1,000 employees.	Serious.	Rate per 1,000 employees.	Slight.	Rate per 1,000 employees.
Lode mines	3,617	18	4.98	97	26.74	415	114.74
Mills and metallurgical plants	520	.....	.....	22	42.31	51	98.08
Placer mines and on dredges	3,500	4	[1]2.29	.....	.....	.....	.....

[1] Assuming that each man in a year averages 6 months' employment. "This rate compares favorably with the 4.98 for the lode mines, especially if the intermittent character of the work is taken into consideration."

The report closes with the text of mining-inspection laws of Alaska.

UNITED STATES.—*Library of Congress. List of references on the training or rehabilitation of disabled or injured men. Washington, 1916. 5 typewritten pages.*

—— *Public Health Service. Miners' Consumption, a study of 433 cases of the disease among the zinc miners in southwestern Missouri, by A. J. Lanza, with a chapter on Roentgen ray findings in miners' consumption, by Dr. Samuel B. Clark. Public Health Bulletin No. 85, Washington, 1917. 40 pp. Illustrated.*

See pages 74 to 76 for a brief summary of this report.

—— *War Department, Adjutant General's office. Guide to civil employment for ex-soldiers. Washington, 1916. 124 pp.*

The purposes of this pamphlet are stated to be:

"1. To improve the Army by attracting to it the very best class of American youth, those who have a determination to fit themselves for their highest duty to their country and at the same time acquire vocational training and the opportunity to exercise it with advantage to themselves after they have left the military service.

"2. To disabuse the mind of the public of the impression that is too prevalent, even among those otherwise well informed, that the Army is a refuge for those who have failed in or are unfitted for other lines of employment, and to acquaint those who have that impression that the requirements for enlistment are so stringent that only those of good moral character who are practically physically perfect specimens of manhood can secure admission to the Army. In short, that a certificate of honorable service in the Army is an assurance that the possessor is competent and worthy for employment in any civilian capacity to which he may aspire and for which his education, acquired during his Army service, may qualify him.

"3. To explain to the soldier, or former soldier, how he may take advantage of the vocational training acquired in the Army, and to describe some of the civil employments that are available for former soldiers and how those employments may be secured."

Statutes relating to preference in employment for honorably discharged soldiers are reproduced. Addresses of recruiting officers, with whom correspondence relating to employment may be sent, are given. A list of employments in State, county, and municipal governments is also given, showing the qualifications required for such employment, with salaries and wages.

FOREIGN COUNTRIES.

AUSTRALIA.—*Bureau of Census and Statistics. Monthly Summary of Australian Statistics, Bulletin No. 62, February, 1917. Melbourne [1917] 63 pp. Price, 9d.*

Estimates the population of the Commonwealth on December 31, 1916, at 4,875,325, or a decrease of 56,663 (11.5 per cent) from 1915. Gives a table showing 91,824 old-age and 24,769 invalid pensioners on December 31, 1916, the average fortnightly pension payments as of June 30, 1916, being 19s. 4d. ($4.70) and 19s. 7d. ($4.76), respectively, and the aggregate annual rate of payment being approximately £2,945,076 ($14,332,212.35). From October 10, 1912, to December 31, 1916, 554,763 claims for maternity allowance were passed. The percentage of unemployment was 5.3 for the third quarter of 1916, as compared with 8.8 for the corresponding quarter of 1915, and 11 per cent for the fourth quarter of 1914. Changes in wage rates reported for the Commonwealth indicate an increase per head per week of 5s. 3d. ($1.28). There were 358 labor disputes in 1915, involving a loss of 583,225 days and a wage loss of £299,633 ($1,458,163.99).

AUSTRALIA.—*Court of Conciliation and Arbitration. A report of cases decided and awards made in the Commonwealth court of conciliation and arbitration, including conferences convened by the president, during the year 1915. Melbourne [1917] xxiv., 583 pp.*

Contains a report of 55 cases decided by the court during 1915 under the Arbitration and Conciliation Act, 1904–1911, and copies of 32 industrial agreements.

—— (NEW SOUTH WALES).—*Department of Labor and Industry. Industrial Gazette, Vol. XI, No. 6. April, 1917. 925 to 1049 pp.*

Includes chapters on the industrial situation; a roster of industrial unions; factories and shops act, 1912: Proclamation—Employment of women as lift attendants; judicial proceedings; summary of departmental records; records of industrial boards; industrial agreements; and record of awards terminated, issued, and in force, April, 1917.

—— (QUEENSLAND).—*Department of Labor. The Queensland Industrial Gazette. Vol. 2, No. 5, May, 1917. Brisbane. pp. 233–318.*

This issue contains agents' and district reports, departmental opinions, strike data, labor market reports, operation of war council, legal decisions relative to industrial matters, industrial awards, statistics of accidents in factories, amendments to, and agreements and regulations under, the factories and shops acts.

The amended factories and shops acts require the registration of all shops and specify an annual registration fee varying from £1 1s. ($5.11) to £3 3s. ($15.33). Factories situated within the limits of what is termed a whole act district, although they may have already been registered under the factories and shops acts, 1900–1914, must again register under the amended acts. Factories liable to registration are those employing one or more persons besides the occupier, but a factory in which a person of the Chinese or other Asiatic race is employed must register whether such person is the occupier or a member of the firm, and where no other labor is employed. Bakehouses, for the purpose of this act, including the kitchen of any restaurant or cookshop, where food is prepared for the consumption of the public, even when there are no employees engaged therein, are classed as factories. All places, therefore, which are purveyors of cooked eatables for the consumption of the public must register their kitchens as factories in addition to the registration of the shops. While hotel kitchens are classed as factories, the bars are classed as shops. All warehouses in which goods are sold, exposed, or offered for sale must register as shops. All furniture manufacturers must apply for a registered maker's mark and must stamp every piece of furniture manufactured, so that it may be traced to its origin. The attention of furniture dealers is called to the provisions of the law relating particularly to (1) imported furniture and (2) furniture manufactured by European labor (3) by Chinese labor and (4) by European and other labor not Chinese.

Holiday work must be paid for at one and one-half rate, with a minimum payment of about 12 cents per hour.

Four industrial awards and one agreement have recently become effective. The decreasing number of awards would seem to indicate that activity in this direction in 1916 was caused by high prices of foodstuffs in that year. Prices have somewhat receded and are becoming steady.

—— (WESTERN AUSTRALIA).—*Statistical register for the year 1915 and previous years. Part 1: Population and vital statistics. Perth, 1917. 60 pp.*

Entirely statistical, giving tables of population, immigration, emigration, naturalization, meteorology, and births, deaths, and marriages. The estimated

population on December 31, 1915, was 318,668, a decrease of 1.64 per cent from the preceding year.

DENMARK.—*Den Faste Voldgiftsrets Kendelser, 1915, 1916. Udgivne ved Rettens Foranstaltning. 2 volumes. Copenhagen, 1916, 1917.*

These volumes are the case reports for 1915 and 1916 of the permanent industrial arbitration court of Denmark, created by law in 1910 to settle certain classes of dispute arising between members of the general employers' federation and the general trade-union federation. (See MONTHLY REVIEW for August, 1915, pp. 14, 15.) The volumes contain no statistical summary of the cases tried. It appears, however, that 27 cases were disposed of in 1915 and 23 in 1916.

GREAT BRITAIN.—*Board of Trade. Handbooks on trades in Lancashire and Cheshire, Textile trades, 46 pp.; Handbooks on London trades, food, drink, and tobacco trades, 22 pp.; Laundry work, dyeing, and cleaning, 16 pp.; Printing, bookbinding, and stationery trades, Part I, Boys, 34 pp., Part II, Girls, 20 pp. Price, 2d. each. Handbook to Bristol trades for boys and girls, 44 pp. Price 4d. London, 1915.*

The handbooks on trades in Lancashire and Cheshire, and those on London trades were prepared on behalf of the Board of Trade for the use of advisory committees for juvenile employment, and the handbook to Bristol trades for boys and girls is a report by the skilled trades and apprenticeship subcommittee of the Bristol advisory committee for juvenile employment appointed by the Board of Trade in connection with the Bristol labor exchange. It is the purpose of these handbooks to furnish information that will assist boys and girls in the choice of suitable employment. However, to meet local and individual needs this information, it is suggested, should be supplemented by consultation with labor and juvenile employment bureaus. The processes, occupations, wages, hours, other labor conditions, opportunity for promotion, regularity of work, and educational and technical courses provided, are presented.

——*Manuals of emergency legislation. Defense of the Realm Manual (3d enlarged edition), revised to February 28, 1917. Edited by Alexander Pulling. London, March, 1917. 537 pp.*

Contains the Defense of the Realm Acts and Regulations, orders of a general character made under the regulations, and an analytical index to acts, regulations, orders, and notes.

————*Food supply manual (1st edition), revised to May 15, 1917. Edited by Alexander Pulling. London, May, 1917. 112 pp. Price, 1s.*

This manual comprises all the legislation affecting the food controller and the orders, other than those of a purely administrative character, issued by him. It is divided into two parts: Constitution and powers of the Ministry of Food and Orders of the food controller as to maintenance of food supply. There is an analytical index giving, under the name of each article of food which is the subject of restrictions or conditions, direct reference to orders, etc., affecting that article.

——*Ministry of Munitions. Health of Munition Workers Committee. Memorandum No. 16. Medical certificates for munition workers. London, 1917. 4 pp. Price 1d.*

This publication presents a form of medical certificate for munition workers, prepared to obtain from employees absent on account of sickness certain information not heretofore collected, especially with reference to cause of illness or its probable duration. Furthermore, it appears that workers have not

been required to state whether immediate absence from work is essential or whether it can be postponed for a brief period until the particular job has been completed. The new form is intended to meet these difficulties. This memorandum is reprinted in full in Bulletin No. 230 of this bureau.

GREAT BRITAIN.—*Ministry of Munitions. Health of Munition Workers Committee. Memorandum No. 17. Health and welfare of munition workers outside the factory. London, 1917. 9 pp.*

This memorandum is reviewed on pages 91 and 92 of this issue of the MONTHLY REVIEW.

ITALY.—*Direzione Generale della Statistica e del Lavoro. Annuario Statistico Italiano, anno 1915. Series II, Vol. 5. Rome, 1916. XII, 435 pp.*

The official statistical yearbook of Italy for the year 1915. Somewhat delayed in publication on account of the war, this yearbook contains in 22 chapters the same data as in previous issues brought up to 1915. Of interest to labor the volume contains statistical data as to the number of workers employed in the principal industry groups, wholesale and retail prices, employers' and workmen's organizations, periodical migrations of workmen within Italy, wages and hours of labor in selected industries, convict labor, strikes, woman and child labor, industrial courts and workmen's insurance.

——— *Ufficio del Lavoro Relazione su l'applicazione della legge sul lavoro delle donne e dei fanciulli dal 25 Luglio 1907 al 31 Dicembre 1914. Rome, 1916. 419 pp. 3 charts.*

This is the seventh periodical report of the Italian labor office to Parliament on the application of the law on woman and child labor. The report consists of four parts. Part 1 gives the full text of all legislation on woman and child labor in force on December 31, 1914. Part 2 gives all administrative measures for the application of such legislation. Part 3 is given over to compilation of court decisions, and Part 4 to statistical data on woman and child labor.

The contents of the present volume will be discussed in a future issue of the MONTHLY REVIEW.

NEW ZEALAND.—[*Registrar General's Office*] *Official yearbook, 1916. (25th year of issue.) Wellington, March 1, 1917. 710 pp.*

Several items in this yearbook are of interest to labor. The number of old-age pensioners on March 31, 1916, was 19,804, an increase of 452 or 2.3 per cent over 1915, and the amount paid out in pensions during the year ending on that date, was £479,339 ($2,332,703.24) an increase of 4 per cent over 1915, the cost per head of population being 8s. 9d. ($2.13) as against 8s. 5d. ($2.05) in 1915. The number of widows' pensions in force on March 31, 1916, was 1,890, an increase of 5.7 per cent over the preceding year, and the amount paid to them was £36,357 ($176,931.34), an increase of 15 per cent over 1915.

There was but one strike of any importance, involving 233 workers who asked for an increase of 10 per cent in wages. This had not been settled on March 31, 1916. Of 177 disputes dealt with by the commissioners and councils of conciliation, 134 (75.7 per cent) were settled or substantially settled by them.

The total number of men for whom employment was found during the year ending March 31, 1916, was 5,978, 4,394 (73.5 per cent) of whom were laborers and 612 (10.2 per cent) of whom were carpenters, the next largest number assisted. During the same period work was found for 2,192 women, mostly for domestic service.

The retail price changes, taking the average aggregate annual expenditure for four chief centers, 1909–1913, as the base or 1,000, are indicated by the following index numbers for the calendar years 1908, 1914, and 1915:

INDEX NUMBERS OF RETAIL PRICES, 1908, 1914, AND 1915, BASED ON THE AVERAGE AGGREGATE ANNUAL EXPENDITURE IN FOUR CHIEF CENTERS, 1909-1913, REPRESENTED BY 1,000.

Group.	1908	1914	1915
Groceries	999	1,076	1,207
Dairy produce	1,020	1,054	1,154
Meat	971	1,158	1,220
House rent	989	1,048	1,020
Fuel and light	974	1,082	1,099

SWEDEN.—*Sociala Meddelanden utgivna av K. Socialstyrelsen. Stockholm, 1917. No. 4.*

Review of labor conditions in Sweden and certain foreign countries, cost of living and the war, retail and wholesale prices, and miscellaneous labor notes.

UNOFFICIAL PUBLICATIONS RELATING TO LABOR.

ACWORTH, W. M. *Historical sketch of Government ownership of railroads in foreign countries. Presented to the Joint Committee of Congress on Interstate Commerce. Washington, D. C. May, 1917. 63 pp.*

A brief for private ownership and, incidentally, for increased rates for United States railroads, by one of the best informed authorities on the subject of railways. A considerable majority of the nations have decided in favor of entire or partial State ownership, the United States and the United Kingdom being the only nations of the first rank that have not taken this step. Notwithstanding this fact, "it is probably safe to make the broad statement that two-thirds of the railway mileage of the world has been built; two-thirds of the railway capital of the world has been provided; and two-thirds of the current railway work of the world is done by private enterprise; and only the remaining third by national undertakings."

AMERICAN ACADEMY OF POLITICAL AND SOCIAL SCIENCE. *Annals, vol. 72. America's relation to the world conflict and to the coming peace. July, 1917. 250 pp.*

Papers on America's relation to the world conflict and her obligation as the defender of international right, on the rights of small nations, and on the elements and problems of a just and durable peace, and America's participation in a league for its maintenance.

AMERICAN ASSOCIATION FOR LABOR LEGISLATION. *Labor law administration in New York. The American Labor Legislation Review, 131 East Twenty-third Street, New York City, June, 1917. Pp. 237 to 522. Price, $1.*

A digest of this publication will appear in the September issue of the MONTHLY REVIEW.

AMERICAN RAILWAY ASSOCIATION. *Special Committee on National Defense. Bull. No. 5. Washington, D. C., May 24, 1917. 4 pp.*

ANDERSON, B. M., JR. *The value of money. New York, Macmillan, 1917. 610 pp.*

A thesis founded on the dynamic, as opposed to the quantity, theory of money.

ASHE, SYDNEY WHITMORE. *Organization in accident prevention. New York, McGraw-Hill Book Co. (Inc.), 1917. 130 pp. Illustrated.*

Successful educational experiences in organizing safety work, under the following heads: I. Fellowship, system, education, discipline; II. Specific accidents which may be reduced by educational means; III. Medical and physical examination of employees, with special reference to tuberculosis and hernia; IV. Emergency hospitals and first-aid work; V. Records, analysis, ratio curves; VI. Accident relationships. The author is in charge of the educational and welfare department of the Pittsfield works of the General Electric Co. and is otherwise identified with the safety movement.

ASSOCIATION OF CHAMBERS OF COMMERCE OF THE UNITED KINGDOM. *Monthly proceedings and report of meeting of executive council, May 9, 1917. London, 1917. pp. 21–41.*

Includes resolutions and recommendations on the subject of British and enemy shipping.

AUSTRALIAN LABOR FEDERATION, W. A. DIVISION. *Report of proceedings of general council (congress), Kalgoorlie, W. A., May–June, 1916. Peoples Printing and Publishing Co. of W. A., Ltd., 38–40 Stirling Street, Perth. 62 pp.*

BAUER, STEPHAN. *Sozialpolitik im Kriege und nach Friedenschluss. Zürich, 1917. 28 pp. (Schweizerische Vereinigung zur Förderung des internationalen Arbeiterschutzes. Veröffentlichungen, Heft 42.)*

A paper on "Social policies during the war and after the conclusion of peace," read before the Swiss section of the International Association for Labor Legislation by the director of the International Labor Office in Basel, in which the author suggests that the economic measures taken by belligerent and neutral countries since the outbreak of the war may make necessary radical changes in the social policies of all civilized countries. He analyzes and reviews the economic measures enacted, gives statistical data as to the results, and discusses the policies which the changed conditions will make necessary, suggesting, among other things, State control of all necessities. He predicts great industrial activity after the war, followed by a crisis, and suggests means of making the crisis less acute.

BOYD, JAMES HARRINGTON. *Socialization of the law. In American Journal of Sociology, May, 1917. pp. 822–837.*

"To-day the dominant phases of the development of American jurisprudence are those exhibited by the socialization of the law, on the one hand, along the lines of social-insurance laws which are based upon the public purpose involved in providing for the laboring classes a normal physical existence for the whole life consistent with a wholesome moral and social welfare, and in the regulation of hours and conditions of employment of women, and prohibiting the employment of children under a certain age, the fixing of a minimum wage, public health and morals; on the other hand, in providing such remedies by legislative action as eliminate the friction and economic waste arising out of conflicts between groups of employees and their employers over wages and conditions of employment."

BRITISH LABOR PARTY. *Report of sixteenth annual conference, held in Manchester, January 23 to 26, 1917. London, 1917. 170 pp.*

The report of the sixteenth annual conference of the labor party of Great Britain, specially called, in the first instance, to deal with after-the-war problems, and the largest ever held. The membership of the party is about two and one-quarter millions.

The report of the conference covers 69 pages of small print and contains the resolutions passed on a number of important questions, including, besides military and industrial demobilization measures, the part of labor in the present government, the Clyde deportations, the nationalization of railways, and other matters.

The report of the executive committee and the parliamentary report are given in full. In Appendix VII is an account of the reception by the prime minister, on March 6, of the deputation presenting the resolutions adopted by the conference.

BROWNLIE, J. T. *The engineers' case for an eight-hour day. Amalgamated Society of Engineers. Great Britain [no date]. 16 pp.*

A pamphlet in answer to the question, addressed to the trade-union representatives by the Engineering Employers' Federation, What security can be offered to employers that reduction of hours will not result in a reduction of output?

Statistics in regard to the increased output that followed the introduction, by legislation, of the 10-hour day, are well known to students of industrial history, but figures in reference to output under an 8-hour day are not published and are not available to the ordinary student. The author therefore cites several cases of the operation of the 8-hour system, with unvarying testimony as to its profitableness.

The foreword, contributed by the general secretary of the Federation of Engineering and Shipbuilding Trades, credits Mr. Brownlie's arguments with being "a clear and succinct statement of the case for an 8-hour day, and furnishing, perhaps, the first practical and scientific statement ever issued in furtherance of this movement for a substantial reduction of hours without loss of wages."

CHARTRES, JOHN. *Judicial interpretations of the Munitions of War Acts, 1915 and 1916. London, Stevens & Sons, 1917. 76 pp.*

A handbook designed "to facilitate reference to any relevant passage in the judgments delivered in munitions tribunal appeal cases." The greater number of the decisions cited have to do with the leaving-certificate provisions of the act.

COOPERATIVE UNION LIMITED (UNITED KINGDOM). *The 48th annual congress, 1916. Proceedings. Published by Cooperative Union, Limited, Holyoake House, Hanover St., Manchester. 855 pp.*

The proceedings of the forty-eighth annual congress of the cooperative, distributive, and productive societies of the United Kingdom held at Lancaster, England, June 12 to 14, 1916. About 1,350 delegates were in attendance. The societies had at that time a membership of 3,310,724, the trade done during the year amounting to £165,634,195 ($806,058,810). Approximately 30 per cent of the employees of the societies are members of the Amalgamated Union of Cooperative Employes, formed in 1891 as the Manchester District Cooperative Employes' Association and amalgamated with other associations a few years later. Disputes with this organization, together with the allied conciliation boards, hours and wages boards, and a cooperative defense committee, were the subject of a considerable part of the debate of the congress.

The report includes a paper on the "Economic results of the war and their effect upon the cooperative movement," by F. Hall, adviser of studies, Cooperative Union, and one on the "War, education, and cooperation," by A. L. Smith, master of Balliol College, Oxford.

FICKER, NICHOLAS THIEL. *Shop expense: Analysis and control. New York, Engineering Magazine Co., 1917. 236 pp. 20 charts. Industrial Management Library.*

According to recent figures "only 10 per cent of the 250,000 or more manufacturing plants in the United States have adequate cost-finding methods in operation; 40 per cent estimate their costs, and 50 per cent have no basis whatever of knowing what these costs are." This being the case, "the science of industrial management can not be considered as in anything but a transitory state of development," and this book has been written with the object of assisting in the standardization of cost-finding methods.

The findings of the author, like those of Mr. H. L. Gantt, are that the orthodox methods of cost finding are wrong, since in their application the management is able to shift responsibility from its shoulders to those of the shop proper.

FURNISS, H. SANDERSON, ed. *The industrial outlook, by various authors. London, Chatto & Windus, 1917. 402 pp.*

This group of essays by various authorities associated with English universities and schools of economics, edited by the principal of Ruskin College, Oxford, should not be overlooked by the student of this very important subject. It is evident that each author not only is thoroughly conversant with his thesis but has given more than the average care to its exposition for the present volume. A suggestive bibliography follows each essay.

To quote from various parts of the editor's introduction:

"Few impartial observers could be found who would look back with satisfaction upon the industrial situation as it was during the years immediately preceding the outbreak of war. * * * And yet it is back to the old state of things that we shall inevitably drift if we attempt to deal with the immediate problem of reorganization without reference to the more distant future, and without keeping in mind more far-reaching reforms. The fact that reorganization will become necessary immediately on the conclusion of peace provides a great opportunity for the reconsideration of many problems—an opportunity which would hardly have occurred but for the war, and one which certainly must not be lost."

"To some, at any rate, among the working classes, the war has meant a distinct rise in their standard of life, which is not likely to be relinquished without a struggle. Labor, as a whole, has made great sacrifices during the war, and those who speak on its behalf will insist that these sacrifices shall not be forgotten, and that the position of labor in industry in future shall be very different from what it was formerly. The great danger is that the working-class leaders will not make up their minds as to what that position ought to be until it is too late, and that they will place before the Government at the last moment ill-thought-out and impracticable proposals. Let the labor movement think out at once a definite policy which can be laid before the Government at the right time; and let its leaders be able to say not merely, 'This is our policy,' but 'This is how it can be carried out.'"

"Each of the writers has attempted to explain as fully as space would allow the conditions prevailing before the war with regard to the subject under consideration, and also to point out the changes brought about by the war itself. * * * It was felt that this could not be avoided, and that otherwise the suggestions as to reconstruction which some of the chapters contain would lose much of their weight and be less easily understood."

The essays are as follows: Employers and property, by George W. Daniels, University of Manchester; The war and the status of the wage-earner, by Henry Clay, author of Economics for the General Reader; Labor organization, by J. R. Taylor, University of Leeds; The control of industry by producers and consumers, by William Piercy, London School of Economics; Rural problems, by Arthur W. Ashby, Institute for Research in Agricultural Economics, University of Oxford; Credit and banking, by T. E. Gregory, London School of Economics; and Industry and taxation, and The state and the control of industry, by W. H. Pringle, London University.

INDIAN JOURNAL OF ECONOMICS. *Issued quarterly by the University of Allahabad. December, 1916.*

Contains several articles on rural problems in India, including agricultural banks, various phases of the tenant system, and an economic survey of a Deccan village.

INDUSTRIAL ECONOMIST. *A quarterly journal of economic information. May–June, 1917. Washington, D. C.*

Contains articles on the suspension of the literacy test in the case of Mexican seasonal labor, the industrial cataclysm in Russia, and the farmer and organized labor. Gives the personnel of the Council of National Defense, the Advisory Board, and various committees for the conduct of the war.

INTERNATIONAL MARKET OF MILK AND MILK PRODUCTS. *First quarter, 1917.*

A pamphlet compiled by the price inquiry office of the Swiss Agricultural Association.

In this issue the economic influence of general conditions on dairying is discussed. Production and prices of fodder in the more important producing countries, the milk supply, and fluctuation in and tendency of prices of dairy products are discussed.

The following is quoted from the summary:

"In many instances the fixation of maximum prices rendered the production of milk unprofitable. The number of cows was therefore limited, whereas the breeding of cattle increased. In order to prevent a further drop, higher prices ought to be granted in correspondence to the advanced prime cost. Governments ought to take such argument into consideration when fixing maximum prices. In America, too, markets may reckon on an improvement in prices; the prospects as to production, it is true, are better there than in Europe, but the increasing firmness of corn markets augurs favorably for a rise in prices for all sorts of milk products."

JARROTT, THOMAS L. *The problem of the disabled soldier. Reprinted from the University Magazine [Montreal], April, 1917.*

This article is noted on pages 111 to 113 of this issue of the MONTHLY REVIEW.

MARTIN, GEOFFREY. *Industrial and manufacturing chemistry. Part I: Organic. New York, Appleton, 1917. Third ed. 734 pp. Illustrated.*

A practical treatise on the applications of organic chemistry to the arts and manufactures, by an English chemist but embracing both British and American practice, and intended to serve either as a textbook or as a work of reference. The editor's aim has been to cover the whole range of subjects with which the industrial chemist and manufacturer are usually concerned in order to meet the requirements of all business and practical men interested in chemical processes, of manufacturers, consulting chemists, chemical engineers, patent workers, inventors, technical lawyers, students in technical institutions, lecturers on technology, fire insurance inspectors, and others. Statistics, so im-

portant from a commercial standpoint, are made a feature of the work. The profitable utilization of by-products, a matter of great importance to many manufacturers, has received special consideration. Matters calling for industrial research have been especially emphasized by the editor. Full literary references are prefixed to each article so that the reader may have before him at once the authorities of all countries.

NATIONAL BANK OF COMMERCE IN NEW YORK. *War finance primer, May, 1917. 136 pp. Illustrated.*

Published by the National Bank of Commerce in New York as part of its effort to cooperate with the Government in war financing.

NATIONAL CHILD LABOR COMMITTEE. *Proceedings of 13th annual conference, Baltimore, March 23 to 25, 1917. The Child Labor Bulletin, May, 1917. 105 East Twenty-second Street, New York City. 82 pp. Price, 50 cents.*

Contains a number of papers of interest, notably one on the vocational bureau of the Chicago public schools by Anne S. Davis, chief vocational adviser. The "definite and immediate purposes" of the bureau are said to be the following: To study industrial opportunities open to boys and girls; to advise children about to leave school and retain them in school when possible; to place in positions those children who need assistance in securing employment when every effort to retain them in school has failed; and to follow up every child who has been placed, advising him to take advantage of every opportunity for further training and helping him to develop greater efficiency while at work.

The bureau has retained in school between 25 and 30 per cent of the children who have applied for work permits simply by telling them and their parents of the poor positions open to boys and girls under 16 years of age and the greater and more varied opportunities open to those who have had training beyond the elementary schools. It has established a scholarship fund to enable needy children who have done well in school to remain there after the legal age for going to work is reached, over $800 a month being thus dispensed at present. The children at work who have been assisted by the bureau are supervised by a follow-up system, and fairly complete industrial histories of several thousand children are being recorded. The bureau learns the kind of work done, the wages received, the changes of position, their failures and successes, and is thus able to build up a constructive program for dealing with the 14 to 16 year old child.

NATIONAL INDUSTRIAL CONFERENCE BOARD. *Workmen's compensation acts in the United States: The legal phase. No. 1. Boston, April, 1917. $1.*

The National Industrial Conference Board, composed of representatives of the large manufacturers' and other industrial associations of the United States, presents this report on the legal phase of workmen's compensation acts as the first of a series, it being the intention to discuss later their operation from the medical, economic, and administrative standpoints.

The first report is intended "to epitomize the legal status of the employer in the light of the present operation and administrative and judicial interpretation of compensation legislation in its more important aspects." The inquiry was confined to essentials, and the description, while legally accurate, is primarily for laymen.

Judicial decisions relating to compensation legislation are "numerous, uncompiled, in separate form, and divided by two contradictory conceptions of the nature of the legal relation established." The decisions of the boards, commissions, or arbitrators who administer the provisions of most of the existing

acts are incompletely reported or are unpublished, though the operation of these bodies "is of the most practical importance in contracting or expanding the application of a statute, increasing or decreasing the cost of its administration, the expense to the litigants, and the efficiency of relief." Without the adoption of rational scientific standards for compiling, systematizing, analyzing, and comparing the operation of the various acts, it can not be hoped to appraise practically their comparative value.

As a result of its close examination of the legal structure and administration of the acts, the conference board makes the following suggestions: The immediate establishment, by the States, of "a permanent, scientific, uniform system of compensation statistics," including provision for the separate publication of judicial decisions relating to the compensation principle, and substantial memoranda of all contested cases determined by administrative bodies; the establishment of definite insurable standards of liability; compilation of systematic and uniform accident data; clear discrimination, in legal definition, among "occupational disease," "accident," and "injury"; the encouragement of direct settlement between employer and employee, such practice to be conditioned by adequate safeguards for the latter; and the establishment of a fixed tendency toward an exclusively compulsory system, thus eliminating questions as to whether or not employer or employee had made an election.

The report, with its copious citations, is a valuable contribution to the literature on compensation legislation. The dates of the various State and foreign laws are given in appendixes. A second printing of the pamphlet would be improved by an index.

NEW ZEALAND EMPLOYERS' FEDERATION.—*Industrial Bulletin. Wellington, April 5, 1917. Vol. 2, No. 3.*

This number reports miners' strikes and cost of living, and discusses profit sharing and labor copartnership, quoting largely from an address delivered before the National Dry Goods Association in 1914, and contains notes on strikes in Australia, and partnership of capital and labor in America.

OGG, FREDERIC AUSTIN. *Economic development of modern Europe. New York, Macmillan, 1917. 657 pp.*

"It is the purpose of this book to indicate the origins, and to explain with some fullness the nature and effects, of a number of the more important economic changes and achievements in Europe during the past three hundred years." That the volume might be more than a sheer outline, attention is restricted substantially to the United Kingdom, France, and Germany, and to the 150 years preceding the outbreak of the present war.

The author presumes that, in most of its fundamentals, the situation of 1914 will be revived and perpetuated after the war. At all events, an understanding of the conditions that then existed and of the forces that produced them will be necessary to all who propose to watch intelligently the nations' recovery, "a series of public developments which promises to be more truly interesting, even though less dramatic, than the war itself."

The author groups his material in four parts: I. Antecedents of nineteenth century growth; II. Agriculture, industry, and trade since 1815; III. Population and labor; and IV. Socialism and social insurance.

PARKHURST, FREDERIC A. *Applied methods of scientific management. New York, John Wiley & Sons, 1917. Second edition. 337 pp. Illustrated.*

The application of methods of scientific management treated in detail and illustrated by the history of such methods as applied over a period of years by

a company making presses and dies. The work is an amplification of an article with the same title appearing in 1911 in *Industrial Engineering.*

RICHMOND, MARY E. *Social diagnosis. New York, Russell Sage Foundation, 1917. 511 pp.*

This volume is noted in pages 142 to 144 of this issue of the MONTHLY REVIEW.

SCHEFTEL, YETTA. *The taxation of land value: A study of certain discriminatory taxes on land. Boston and New York, Houghton Mifflin, 1916. 489 pp.*

The Hart, Schaffner & Marx prize essay for 1916, presented as follows: The tax on land value, land taxes in Australasia, the tax on value increment in Germany, the English land-value duties, municipal taxation in western Canada, the tax in its fiscal aspect, the tax as a social reform, and expediency of the tax on land value for the United States. The volume contains a comprehensive bibliography.

SEARS, AMELIA. *The charity visitor: A handbook for beginners. Chicago, School of Civics and Philanthropy, 1917. 69 pp.*

"This pamphlet is based on the verbal and written instructions relative to the technique of investigation which for years have been current in the offices of the United Charities of Chicago." It first appeared in 1913. The fundamental change in the present revised edition is the inclusion of a chapter on "Estimating a family budget," by Florence Nesbit, field supervisor of the aid to mothers department of the juvenile court of Cook County.

SIMKHOVITCH, MARY K. *The city worker's world in America. New York, Macmillan, 1917. 235 pp. American Social Progress Series.*

"A plain description of the facts of the city dweller's life, together with some indications of the evolutionary process going on at the city's heart," by the director of Greenwich House, New York. This consideration of the industrial family includes wage workers of various sorts whose family income ranges from $1,500 down to the minimum below which the family becomes a public charge, and covers standards of living, education, work, leisure, health, and several other subjects.

STEINER, JESSE FREDERICK. *The Japanese invasion: A study in the psychology of interracial contacts. Chicago, McClurg, 1917. 231 pp. Bibliography.*

This book (to quote Prof. Robert E. Park, who writes the introduction) is an attempt to study this phenomenon of race prejudice and national egotism, so far as it reveals itself in the relations of the Japanese and the Americans in this country, and to estimate the rôle it is likely to play in the future relations of the two countries.

STRUTT, EDWARD G., AND OTHERS. *British agriculture the nation's opportunity. London, John Murray, 1917. 168 pp.*

In this volume the minority report of the British departmental committee on the employment of sailors and soldiers on the land,[1] signed by Edward G. Strutt, Leslie Scott, and G. H. Roberts, is presented and discussed, together with addenda on housing and other subjects by the signatories, some considerations by "A Free Trader" in favor of their policy, and a preface and appendix on the reclamation of land by A. D. Hall. The report recommends a minimum wage—not national, but fixed by district wages boards—and its corollary, a minimum price for the farmer's wheat, high enough to make arable farming worth while year after year without a check.

[1] For a summary of the report of the committee see the MONTHLY REVIEW for September, 1916, pp. 87–90.

"Everyone will be disposed to grant the case for the reconstruction of agriculture; in these pages the necessary elements of the process are set out. They are threefold—the establishment of such a level of prices as will render intensive farming possible; the improvement of the position of the laborer as regards wages, housing, and the amenities of life; and lastly the recognition that the ownership of land carries with it a duty to the community."

TALBOT, MARION. *The education of women. University of Chicago Press, 1911. 255 pp.*

A discussion by the dean of women in the University of Chicago of "Women's activities, past and present," "The educational machinery," and "The collegiate education of women."

TRADES-UNION CONGRESS PARLIAMENTARY COMMITTEE. *Twenty-sixth quarterly report, March, 1917. General Buildings, Aldwych, London, W. C. London [1917]. 128 pp. Price 1s.*

Devoted largely to a brief of deputations to ministers of the Government, and their replies, covering various matters affecting the interests of laboring people.

TRYON, ROLLA MILTON. *Household manufactures in the United States, 1640–1860. A study in industrial history. Chicago, University of Chicago Press, 1917. 413 pp. Bibliography.*

A portrayal of the system of household manufacturing in the United States as it existed up to 1860, in its relation to the social, political, and general industrial life of the people. The term "household manufactures" as here used comprises "all those articles now made almost wholly in shop or factory which were formerly made in the home and on the plantation by members of the family or plantation household from raw material produced largely on the farm where the manufacturing was done." By 1860 this primitive system had passed out of the life of the nation at large as a factor in its economic development and industrial prosperity.

Table XVIII, covering 60 pages, gives by counties the total and per capita value of household manufactures in 1840, 1850, and 1860, demonstrating the gradual diminishing of the per capita output of the family factory.

VAN BUREN, GEORGE H. *General population and insurance mortality compared. Metropolitan Life Insurance Co., New York, 1917. 7 pp.*

This is a discussion of the mortality experience in 1915 of the Metropolitan Life Insurance Co., insurance department, and of the general population. It notes a general reduction in the total death rate—the death rate for all causes—as shown by the United States Census covering the registration area (approximately 67 per cent of the entire area of the United States), and data gathered by the Metropolitan Life Insurance Co. The experiences appear to agree in showing a decrease in the death rate from typhoid fever, scarlet fever, whooping cough, measles, diphtheria and tuberculosis, and an increase in the death rate from pellagra, influenza, diabetes, cancer, and automobile accidents.

VAN KLEECK, MARY. *A seasonal industry: a study of the millinery trade in New York. New York, Russell Sage Foundation, 1917. 276 pp. Illustrated.*

"The possibility of more adequate control of such conditions as are revealed in the millinery trade through the extension of labor legislation, possibly in provisions for determining wage standards, is the large question which inspired this investigation." The report covers two inquiries—an examination of pay rolls in January and February, 1914, in cooperation with the factory investi-

gating commission of New York, and an intensive study of conditions in a number of typical shops, over a period of several years since 1908, under the auspices of the Russell Sage Foundation.

Appendix D is devoted to the operation of the minimum wage law as it affects the millinery trade in Victoria (Australia).

VEBLEN, THORSTEIN. *An inquiry into the nature of peace and the terms of its perpetuation. New York, Macmillan, 1917. 367 pp.*

"What are the terms on which peace at large may hopefully be installed and maintained? What, if anything, is there in the present situation that visibly makes for a realization of these necessary terms within the calculable future? And what are the consequences presumably due to follow in the nearer future from the installation of such a peace at large?"

This inquiry, in Prof. Veblen's usual brilliant fashion, necessarily covers much ground which concerns industry and labor. The "competitive system," which Adam Smith looked to as the economic working out of that "simple and obvious system of natural liberty" that always engaged his best affections, has in great measure ceased to operate as a routine of natural liberty, in fact; particularly in so far as touches the fortunes of the common man, the impecunious mass of the people. "De jure, of course, the competitive system and its inviolable rights of ownership are a citadel of natural liberty; but de facto the common man is now, and has for some time been, feeling the pinch of it. It is law, and doubtless it is good law, grounded in immemorial usage and authenticated with statute and precedent. But circumstances have so changed that this good old plan has in a degree become archaic, perhaps unprofitable, or even mischievous, on the whole, and especially as touches the conditions of life for the common man. At least, so the common man in these modern democratic and commercial countries is beginning to apprehend the matter."

The author presents, in the closing pages of his comprehensive inquiry, "some slight and summary characterization of these changing circumstances that have affected the incidence of the rights of property * * * with a view to seeing how far and why these rights may be due to come under advisement and possible revision, in case a state of settled peace should leave men's attention free to turn to these internal, as contrasted with national interests."

VERBAND SCHWEIZ. KONSUMVEREINE, BASEL.—*Rapports et comptes concernant l'activité des organes de l'union en 1916. Basel, 1917. 140 pp.*

The annual report for the year 1916 of the Swiss federation of cooperative consumers' societies. The report shows that during the year under review 12 affiliated societies have severed their relations with the federation, while 26 societies were admitted as new members. At the close of the year 421 societies were affiliated with the federation, as against 407 in 1915. The total sales for 1916 of the societies affiliated with the federation amounted to 74,658,943 francs ($14,409,176), as against 50,193,162 francs ($9,687,280) for 1915. The increase of nearly 25,000,000 francs ($4,700,000) in the total amount of sales is, however, not due to the sale of greater quantities of goods, but to the enormous increase in prices, which for 45 articles regularly sold by the societies amounts, on an average, to 70.5 per cent.

WALLING, WILLIAM E., AND LAIDLER, HARRY W., EDITORS. *State socialism, pro and con. Official documents and other authoritative selections, showing the world-wide replacement of private by governmental industry before and during the war. With a chapter on Municipal Socialism by Evans Clark. New York, Holt, 1917. 649 pp.*

This book is declared by its authors to be in no sense a brief for State socialism, its object being simply "to portray the extent of this new governmental

phenomenon and to suggest its probable future development." It is primarily a source book, presenting selections written by experts or selected by experts from official reports, and is not an expression of the personal views of the editors, whose purpose was to provide the reader with the most important data and to leave him free to reach his own conclusions for or against collectivism.

WALPOLE [MASS.] TOWN PLANNING COMMITTEE (CHARLES S. BIRD, JR., CHAIRMAN.) *Town planning for small communities. New York and London, Appleton, 1917. 492 pp. Illustrated. National Municipal League Series.*

A statement of the problems of the small community, with plans for their solution. The main body of the work is in two parts, one dealing with general plans, the other with their application to the community of Walpole, Mass. In Appendix XII is given the model city charter and municipal home rule prepared by the committee on municipal programs of the national municipal league, March 15, 1916. The book contains much information, is profusely illustrated, and includes helpful bibliographies.

WILLIAMS, W. S. *The problem of the unemployed. Boston, Gorham Press, 1917. 106 pp.*

WINSLOW, C.-E. A., AND OTHERS. *Health survey of New Haven (Conn.) New Haven, Yale University Press, 1917. 114 pp. Illustrated.*

A report prepared for the Civic Federation of New Haven by Charles-Edward Amory Winslow, James Cowan Greenway, and David Greenberg, of Yale University. In four parts: Introductory, the sanitary condition of the city, health organization of the city, and vital statistics of New Haven.

WOMEN'S INDUSTRIAL COUNCIL (INC.). *The Women's Industrial News, April, 1917. London.*

Contains the Twenty-second annual report (1915–16) of the Women's Industrial Council, with an account of the Nursery Training School founded by the council for the training of girls as little children's nurses. The contents include also the following:

An article on welfare work, in which Miss Clementina Black, the president, makes this statement with regard to the compulsory employment of welfare workers: "As things stand, welfare workers are likely to be instruments of good to workers whose conditions are already above the average; while, where conditions are below the average—that is to say, where employers care nothing for the comfort or prosperity of their employees—it will not be humanly possible for any welfare worker to remain, in the long run, anything other than an additional instrument of oppression;" a brief discussion of a report by the Employers' Parliamentary Council, which is said to "hint" that the Government pledge to the trade-unions should be repudiated, to "explicitly demand" the repeal of the Trade Disputes Act and to "recommend in no uncertain terms" that the factory acts should be repealed; and a reprint from a contemporary of an illustration of discrimination against women in the payment of time instead of piece rates.

The council criticizes the memorandum outlining the aims of the welfare section appointed by the Minister of Munitions. "To the efforts of the welfare officer the workers owe, indeed, not a little of the improved conditions and comfort enjoyed in many national and other model munition factories;" but the interference of "an irresponsible third party" in matters of wages and hours will be tolerated neither by trade-unions nor by employers, while the discussion of such personal matters as standards of workshop behavior, recreation outside of working hours, and physical and moral conditions in hotels or lodgings, belong to the workers themselves or their elected representatives.

WOLFF, HENRY W. *Cooperative credit for the United States. New York, Sturgis and Walton, 1917. 349 pp.*

Cooperative credit has become an object of attention to the American people. Time and circumstances have given to its dominating principle a variety of shapes and have produced a number of schools. The object to be accomplished is, therefore, to put the successful principle in a shape to suit American surroundings, and this contribution is offered as "an impartial and 'objective' presentation" of the matter, to help in its further consideration and to do something toward preventing "false starts which under the present aspect of things are a danger to be reckoned with."

WOMEN'S TRADE UNION LEAGUE. *Quarterly report, No. 105, April, 1917. 34 Mecklenburgh Square, London, W. C., 1917. 28 pp.*

Contains a brief review of the report of the standing joint committee of industrial women's organizations on the position of women after the war, which considers the effect of the war on women in industry and the conditions as they are likely to be at the conclusion of peace, outlines the reconstruction policy of the organized women workers, and deals with the problems of care of maternity and infancy, educational reform, and the political enfranchisement of women. An article on welfare from the workers' point of view points out that "a system of welfare workers in the service of the employers can never materially increase the well-being of the workers as a whole," for "the impression of 'benevolent despotism' is hard to avoid * * *. No one would deny that the intention of many employers—the ministry of munitions among them—is good; but it is primarily good from the employers' point of view; * * *." It is stated that welfare work is largely an expression of the aim of the average employer to increase output and lower the cost of production. The welfare worker, according to this article, is an anomaly and is a person introduced to "get more out of us." On the other hand, the lady factory inspector, who is not paid by the firm, is considered the friend of the workers, concerning herself with such things as the need of fencing dangerous machinery, with illegal overtime, and shortened meal hours. Several pages of the report are devoted to questions and answers in Parliament, affecting women munition workers.

ZEITSCHRIFT FÜR SCHWEIZERISCHE STATISTIK UND VOLKSWIRTSCHAFT. *Herausgegeben vom Direcktions-Komitee der Schweiz, Stat. Gesellschaft. Vol. 53, No. 1. Bern, 1917. 144 pp.*

The present number of the bulletin of the Swiss Statistical Association contains the results of an investigation made by the federation of Swiss federal officials, employees, and workmen into the application of the federal law relating to the hours of labor in the operation of railroads and other transportation establishments. The same number gives also retail prices of the principal foodstuffs in the various cantons during January, 1917, as compiled by the statistical office of Basel.