

**NEW IDEALS IN
BUSINESS**

IDA M. TARBELL

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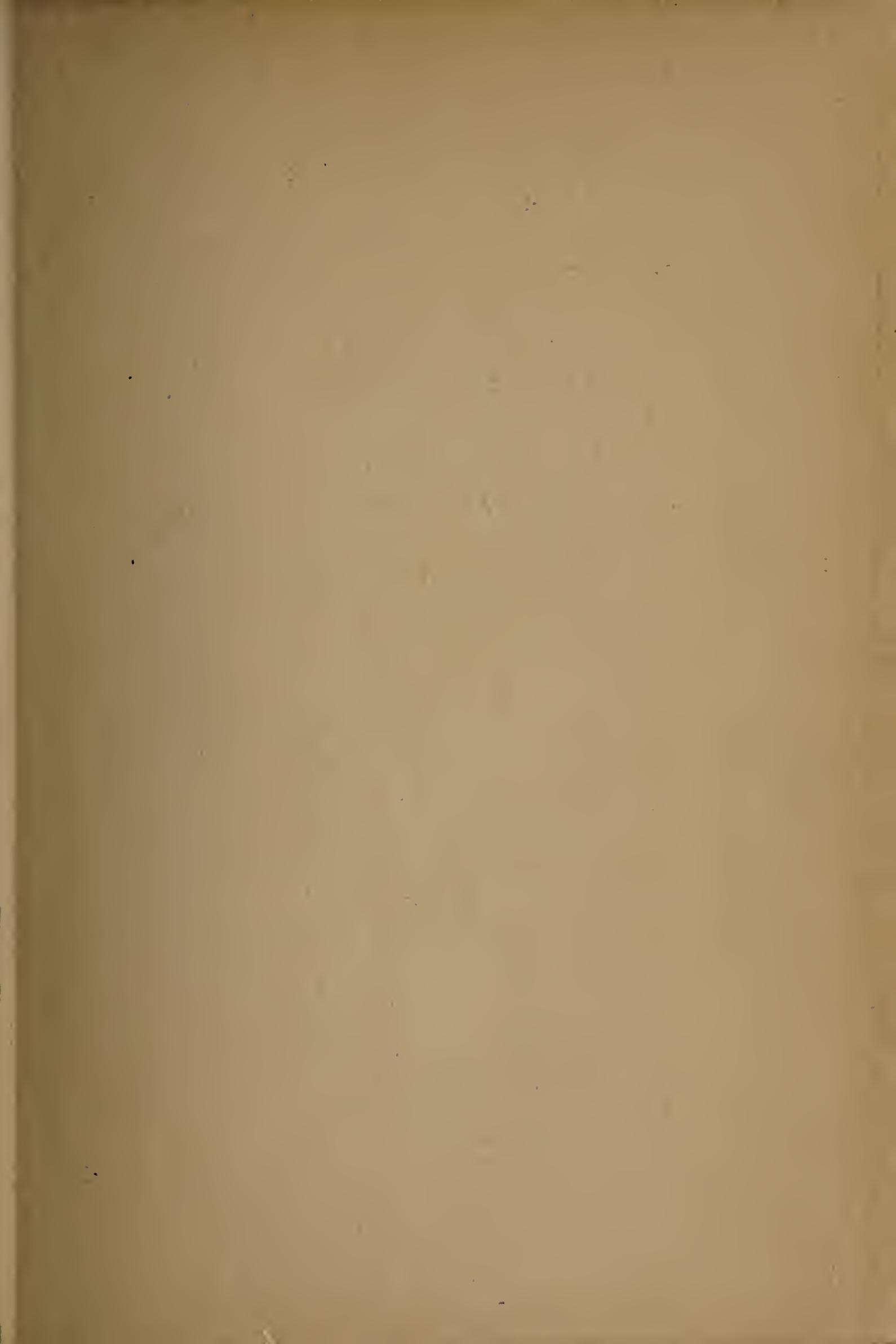
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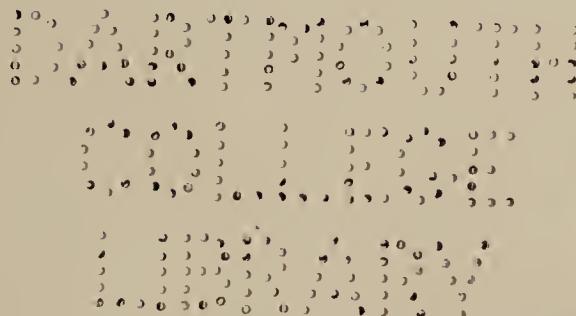
NEW IDEALS IN BUSINESS

AN ACCOUNT OF THEIR PRACTICE AND
THEIR EFFECTS UPON MEN AND PROFITS

BY

IDA M. TARBELL

Author of "The History of the Standard Oil Company,"
"The Tariff In Our Times," "The Business
of Being a Woman," etc.



339

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INTRODUCTION

This book had its starting point in two earlier pieces of work, one a study of a typical American trust — the Standard Oil Company, the other a study of the workings of the protective tariff since the Civil War. Both took me far and wide as an observer in the industrial field. Although my observations in neither case included the relations between management and men in the various plants I visited, I found my attention constantly veering to them, largely because they were often in sharp contrast to those which I had reason to believe were fairly general in this country.

The wider my observation of our working life extended, the more I was impressed that there were forces at work which, properly developed, were bound to overcome many, if not all, of the industrial evils with which we have become so familiar.

Some four years ago the then editor of *The American Magazine* encouraged me to undertake special and careful observation to corroborate my impression. In carrying out his idea, I visited scores of industrial centres, sometimes alone, sometimes under guidance. I talked with hundreds of men and women; president and directors of companies; superintendents; foremen; consulting engineers; safety



INTRODUCTION

and sanitation experts; industrial nurses; men at the furnace, the loom or lathe; girls at the spinning-frame, the canning table, the counter. To see at their work all the men and women in a plant, from those with a shovel or scrubbing-brush to those in the head offices; to look at their conditions, to see them in their homes, to learn from their lips what they thought and felt about it all,—this has been my method. My observations turned my first impression to conviction and were partially recorded in a series of articles which were published by the *American Magazine* under the title of “The Golden Rule in Business.”

However great the lack of efficiency and justice in American industry, it is undergoing a silent revolution. This revolution is centred in industrial management. Back of it lies a belated realisation that the responsibility for the weaknesses and unrest of our industrial life does not rest with the American workman, but with his employer.

The stability of this new movement lies in the fact that management is summoning to its aid great forces which it has hitherto believed to have little or no part in its function. It has summoned science, and growing numbers of American business managers are holding that there is no task which men perform which should not be studied scientifically.

The new management employs not only science but humanity, and by humanity I do not mean merely or chiefly sympathy but rather a larger thing, the recognition that all men, regardless of race, origin

INTRODUCTION

or experience, have powers for greater things than has been believed. I doubt, indeed, if there has been any economic and social gain in the last fifty years which equals this growing conviction of the Powers of the Common Man.

Nothing can stifle these new ideals of Industry. Not only are the human heart and human intelligence with them, but human competition is forcing them. It is with the actual attempts to rise to them that this book deals. Nothing is introduced which I have not seen in operation; nothing which has not seemed to me to be good for the worker, skilled and unskilled; nothing which has not been carried to a point of profit; nothing which an active intelligence and a just spirit cannot realise.

IDA M. TARBELL.

TABLE OF CONTENTS

CHAPTER	PAGE
I OUR NEW WORKSHOPS	I
II "A FINE PLACE TO WORK"	29
III THE GOSPEL OF SAFETY	50
IV HEALTH FOR EVERYMAN	77
V "SOBER FIRST"	110
VI GOOD HOMES MAKE GOOD WORKERS	134
VII A MAN'S HOURS	163
VIII A MAN'S HIRE	193
IX EXPERIMENTS IN JUSTICE	222
X STEADYING THE JOB	258
XI THE FACTORY AS A SCHOOL	290
XII OUR NEW INDUSTRIAL LEADER	317

NEW IDEALS IN BUSINESS

CHAPTER I

OUR NEW WORKSHOPS

He who turns out early in the morning sees a wonderful sight. It is the incoming tide of workers. They have the streets, the cars, and the ferries to themselves. The rest of the world is still within doors. Spend a night near the Stock Yards of Chicago, or in any factory town, and you will be awakened by a sound like that of a rising wind. It gradually resolves itself into a steady tramp, tramp, tramp. For an hour they pour by in the grey light — a silent, grave and steady army of hundreds upon hundreds of men and women, girls and boys. You may follow them to the yards or factories. There the gates close on them. It will be 8, 10, possibly 12, hours before they turn back.

Stand at the Jersey ferries, the New York end of Brooklyn Bridge, at the downtown stations of the elevated or subway in any great city, and from six to nine o'clock the flow of human beings is like the emptying of mighty chutes fed from exhaustless hoppers. In the crowds there is little of the silence and dignity of the stream which flows into the Stock

Yards or the factories of the small towns and countrysides. These masses push and scramble and rush. They are not quiet like the others. They chatter and chaff and "jaw."

There are still other waves in this morning tide. There are those who go down into the earth. They come leisurely out of the grey morning light to the head of the shafts. They are checked, searched for matches, given lanterns, then they disappear. It will be dusk when they come out.

What kind of places are those into which this mighty tide disappears, in which it spends the bulk of its waking hours, and practically all its hours of sunshine? The men and women who do the labour of the world are the most important factor in the thing we call "prosperity." It is only from them that we can expect the robust and unfettered vitality which drives the world to new efforts. It is only they who are equal to the mighty task of disposing of the fruits of their own toil. Everything which concerns them directly or indirectly is of the greatest *economic* importance. No one who knows anything of human beings and the forces which influence them will deny that to a large degree their health, their content, and their efficiency depend upon their surroundings. Workshops matter. They can pull men and women down or hold them steady, stimulate them — as they are ugly and unhealthful, or, bright and fitted to human needs.

The world has been slow in admitting this, but it has been slow in admitting that the worker mat-

tered. He has come cheap through all the ages, and men in power have built up theories to keep him cheap. He did not feel hardships, comfort would spoil him. Couple these ideas with the grim notion that the curse of Cain was on labour and that it was not for a devout man to interfere with the ways of the Lord, and you have a partial explanation of the Old World's indifference to the conditions of its workshops.

These ideas have been slowly dying in the New World. Our indifference has come from another source. You cannot settle a new country without suffering, exposure, and danger. Cheerful endurance of hardships and contempt of surroundings become a virtue in a pioneer. Comfort is a comparatively new thing in the United States.

Men and women are still living who can remember the introduction of the bathroom. We can remember, too, perhaps have shared, the pious fear that the softening of life and the relaxing of conscious endurance of physical discomforts which wealth was bringing to the country were going to weaken our national fibre. It was inevitable that this attitude of the well-to-do property class toward conditions in their own circle should extend to those whom they employed. Thirty years ago there was scarcely any complaint of labour that aroused more righteous indignation from the housewife, mine owner, manufacturer, than this one of conditions.

To-day it is the employer himself who is insisting that the best possible workshops are none too good.

Indeed, there is no problem which Industry is attacking with more interest and intelligence than that of the conditions under which labour of all kinds shall be done. It begins with the basic matter of the building. The new model factory is the most interesting architectural development in the country, far more original and exciting than most of our pretentious public and private buildings.

It is not our architects who are responsible for the revolution in factory architecture. It is the employer himself. Some eight years ago when the head of a great and growing company in Rochester, New York, began to think of a new factory, he found that if he was to get what he wanted he must do pioneer work. Taking a mechanical engineer and an architect with him, he visited some 150 different plants, the best of which he could learn. He took full notes on every point which entered into his problem — foundations, flooring, ventilation, lighting, opportunities for expansion, relation of offices and show rooms to factory, lunch rooms, rest rooms, club room, opportunity for exercise both within and without doors, probably the most important collection of information on factory building ever gathered in this country. On this as a basis, he reared a plant in the centre of an eight-acre field, which from every point of view, conveniences, fitness, strength, economy, is a model. One point of particular pride with the builder is that there are only two features of his factory which cannot be called necessary. They are the cornice and the handsome

marquee over the entrance. If not necessary, they give a touch of elegance to the severe façade which is their justification.

There are many signs no employer will ever again be obliged to do what this gentleman did. To begin with, his information has been freely put at the disposal of his townsmen who have built since he did. Moreover, his work and that of other like-minded manufacturers has begun to awaken architects to the opportunity of real service which lies in this field. One has only to look at such work as has been done in the factories of Detroit by Kahn & Wilby, or at the admirable group of buildings at Nela Park near Cleveland by Wallis & Goodwillie to realise what a sound and admirable beginning our architects have made. The Nela Park group is particularly interesting, since it provides a plant which makes possible a higher degree of co-operation between the different departments of a great modern industry than exists probably elsewhere in the United States. It is a remarkably successful realisation of a great industrial dream.

Nela Park is the headquarters of The National Lamp Company. This concern is under the control of two men who believe that production can be more profitably carried on in small than in large units. One believes 500 operatives in a factory are the best number — the other 300, so as they build plants, they alternate: There are some 25 factories in the company. Each is as far as its management is

concerned a self-directing concern. Once a year the heads of each of these 25 concerns meet, and each is obliged to show his record in detail and defend it under the fire of criticism of both the officers of the company and all of the competing heads. Their annual test of records lasts sometimes three months, and I have been told that frequently the officers are obliged to retire to a sanitarium after it is over! A few years ago it was decided to establish a headquarters for the concern outside of Cleveland — a point where all executive departments could be in touch, where all could comfortably foregather for their annual meetings, and where the sales force could meet in summer camp. The idea grew in the minds of the management. Fortunately they secured an architect in Mr. Wallis who appreciated the opportunity industry offers his profession, and he eagerly set himself to work out something which would show the value to industry of a proper application of form, of colour and of design. To Mr. Wallis, Nela Park ought to be an "Industrial University," and that is what it is — a place of education, and as truly an inspiration to those who belong to it as any university group of buildings in the country is an inspiration.

Nela Park represents one industry. It focuses the financial, administrative, purchasing, manufacturing, distributing and marketing agencies in such a way that all can see something of the true relation and nature of the present elements in the problem of big business. It is a great and compelling ob-

ject lesson in the co-operative and interdependent character of the various elements of modern industry, extraordinarily educative and inspiring in its suggestiveness; but it is applicable only to the highly developed concerns.

An even more exciting and far reaching development than the "industrial university" is the industrial town centre, the effort to set aside in cities districts where model factories strictly regulated by city ordinances may be erected. They are to be planned with relation to the districts from which labour is drawn, with regard to transportation, to open air space, and to saloons, and they are to be made beautiful as well as convenient and suitable. The Minneapolis Industrial Association is leading the way in this planning. The City Plan Committee of New York has made a start. It is for the architects to rally to this movement as they have to the civic centre. It is an even greater opportunity. It will affect more men and women, and affect them where they really live.

The new Bureau of Printing and Engraving in Washington gives an excellent opportunity to compare good, modern factory architecture with the adaptation to factory purposes of classic design. As this bureau belongs in the noble scheme of public buildings it was imperative that its façade should harmonise with the other members of the group. In approaching it, one sees merely another white marble structure of great dignity and beauty, entirely in keeping with everything from the Congres-

sional Library to the Potomac, but the last thing that one would think of was that this was a factory. Go to the rear, and immediately you have an entirely different impression. The four wings, each five stories in height, are practically of glass, yet the disposition of cornice and pillar is such as to give both dignity and beauty while preserving fitness.

Two things attract at once in the modern factory: they are no longer low, they are no longer dark. The first consideration, indeed, in all modern factories is light. To do good work men must see, and to see they must have plenty of light. The only light that costs nothing is daylight, hence men build their shops practically of glass. The effect of this on the interior is almost startling to one who has never in his life been in anything but our sepulchral houses, offices, churches and theatres. It is almost like being in the open.

Go back to the textile factories of 1850, the factories which the owners in those days called "palaces," so great an improvement were they upon the garrets and sheds in which spinning and weaving had frequently been carried on, compare them with what we have to-day, and something of the gain is evident. The old building was a solid brick or stone structure with many small windows fitted with small panes of glass. As the operative went to work at five o'clock in the morning and did not stop until six or seven, artificial light was necessary for a number of hours. Candles and whale oil lamps were used literally by the hundreds. There was prac-

tically no ventilation, so that the workrooms were filled with smoke and stench. The coming of kerosene made matters a little, not much, better. The shortening of hours helped greatly. Gas and electricity still further improved things; nevertheless, there has been, until recently, in this country two hours of the day when our manufacturing was done practically in the dark.

The economic waste of this has been enormous. As for the effect on the worker — eyestrain, headache, lack of interest, moodiness, are inevitable results of trying to do tasks in dim light. It has been believed by many and so stated that accidents are more frequent in the dark hours of the day and in the dark seasons of the year. The most trustworthy statistics do not bear this out. The safety director of the Youngstown (Ohio) Sheet and Tube Company, J. M. Woltz, in a study of a year's accidents in his plant shows that the high points of the day are from 9 to 9:59 A. M. and from 3 to 3:59 P. M. The high point of the year in his study is August. Mr. Woltz's chart follows the lines of those of the German Government covering twenty-five years and is close to those of the Department of Labor of the United States published in 1910.

The International Harvester Company was one of the first concerns to realise the evil of dark shops. The Harvester Company carries on probably twenty different trades. About ten years ago the officials wakened to the fact that they were doing nothing to conserve their most vital asset, their men and

women. Fortunately for them they had in their employ at that time a man who for several years had been fitting himself for exactly what they needed done. His name was C. W. Price.

It must have been twenty years ago that Mr. Price, as a young man in business in Iowa, became interested in various forms of philanthropic work in his home town. For a number of years he read books on sociology, with the hope of getting a practical basis for action. To get nearer to his problem Mr. Price took a position in the McCormick factory in Chicago. In this factory he had charge of a department which brought him into close touch with all the foremen in the shop and gave him an opportunity to study at first-hand the conditions under which men are employed in modern industry. He spent some five years in practical shopwork before he was given a chance by the officers of the company to take full charge of its welfare work.

Five years ago an attack was made on the bad lighting general in all the plants. A committee on which there were seven electrical engineers besides Mr. Price was appointed to study the problem. This committee spent some six months investigating what had been done by other companies and in experimenting in its own shops. It worked out standards covering the type of lamp, the type of reflector, the amount of light per square foot in shops where there was no gas, the amount of light per square foot where there was gas and smoke, spacing between the lamps and also the height of the lamp

from the floor. These standards were at once applied in twenty-two different plants.

From the Harvester Company, Mr. Price went later to serve as an expert to the Industrial Commission of Wisconsin. When shop lighting was taken up by the commission, he had his solid experience to contribute. The commission and Mr. Price were ambitious, however, to do something still better, and to embody their findings in a bulletin which everybody in and out of the State could use.

The working methods of this commission are purely co-operative and democratic. It never attempts to fix a standard or suggest a law which has not been considered by representatives of all of those concerned in the matter. For instance, when shop lighting came up, a committee was appointed made up of employers, representatives of labour unions, the commission and Mr. Price.

To aid them they drew upon the investigations and experiences of various local industries, especially those of the Pfister & Vogel Leather Company of Milwaukee. Pfister & Vogel had done the best piece of shop lighting in the State. Their chief electrician, Fred Schwarze, who was responsible for it, put his experience at the service of the commission.

Many weeks of joint work were spent over the problem; there was much squabbling, cries of "It can't be done," "It won't work"; but at the end there was a united judgment that the results were the most scientific and practical that had so far been

developed. The bulletin in which they are recorded is followed almost without a whimper by Wisconsin manufacturers, for they know that able men in their own businesses have had a part in framing the orders. To aid them still further the commission has published a handbook on shop lighting, prepared at its request in "barnyard English" by Mr. Schwarze, which is far and away the most important popular contribution ever made to the subject, an easily understandable scientific treatise based on his own highly successful experience.

This handling of shop lighting is an example of the way in which the Wisconsin Industrial Commission established all of its industrial standards.

What is true of lighting is true of ventilation. Workshops are rapidly becoming the best ventilated places we have. Where buildings are high, with many easily adjusted windows, ventilation is a much simpler problem than in the low, old-fashioned buildings of few windows. But few factories of any description depend now on windows alone for air. Ventilating plants are almost invariably installed in new factories, and thousands upon thousands of old plants of all descriptions have equipped themselves with them.

I have spent hours in factories of all kinds, including even a redeemed tannery and laundry, and never for a moment had the sense of suffocation and closeness so common in drawing-rooms, theatres, and churches. They were scientifically ventilated and the temperature was rigidly supervised. At the

Brown & Sharpe Manufacturing Company in Providence, Rhode Island, the proper temperature for each room has been set by careful investigators. Placards like the one here reproduced are on the bulletin boards of each room, and a temperature boss sees that there is no variation. What this amounts to is that labour — all kinds of labour — may be carried on in perfectly aired and heated shops, that the old notion that this was Utopian is exploded by the actual experience of hundreds of employers. And they claim that it pays!

TEMPERATURES

In order to secure the most comfortable conditions for all, the following standard temperatures will be maintained as nearly as possible:

OFFICES and DRAFTING ROOMS..... 67° to 69°

SHOP FLOORS and Rooms where workmen are mostly seated at work..... 67° to 69°

SHOP FLOORS and Rooms where workmen are moderately active and free to move about..... 65° to 67°

FOUNDRY, SMITHSHOP and CARPENTER SHOPS 55° to 65°

STORAGE ROOMS where workmen are not regularly employed..... 40° to 50°

On account of the daily range of temperature, the rooms may be 2° to 5° cooler than the above standards during the early morning hours.

BROWN & SHARPE MFG. Co.

The changes in the factory with which the public is most familiar are those which go under the gen-

eral head of welfare work. An enormous contribution to human health and comfort is being made through decent toilets, cloak-rooms, lunch- and rest-rooms, and first-aid-to-the-injured rooms. The disregard of the common physical needs of men and women in building factories in the past would be unbelievable if it were not so constantly thrust in our faces.

Four years ago a plant covering probably fifty acres on the outskirts of one of our greatest cities, an investment of several million dollars, was looked over by a young woman who had been asked to take charge of a department of social service. She found that at that time, although there were on an average, two thousand five hundred men, daily employed, there was not a toilet-room on the property, and there was but one drinking fountain. The men were obliged to go to one of the many near-by saloons to take care of their physical necessities.

I doubt if it will ever be possible in this country again to duplicate the above neglect. Welfare arrangements of all kinds are becoming as much a concern of architects and builders of industrial establishments as foundations and lights.

One hears welfare work much sneered at. I find a rather widespread notion that it is only introduced as a species of advertisement or as a sop to the employée. Even if this were true, it is a better use of money than that which big business once credited under that head. It is not so many years ago that a witness for one of our great corporations was re-

ported as saying facetiously, he claims, that its contributions for influencing political opinion were charged to "welfare work"! A thousand dollars spent in wash basins, even if the wash basins are much bragged about, is a better sort of welfare work.

My experience with this new factory development has convinced me that those who use these improvements as advertisements are not one per cent. of the total that make them. In the vast majority of cases they are introduced in the same spirit in which men put bathrooms into old houses or arrange for them as a matter of course in building new ones: because they have come to recognise that they are good things to have. Whatever the attitude of mind toward these decencies and conveniences may once have been, they are now taken for granted as a necessary part of a factory.

Of course there are still boards of old-school directors who stew about the expense and talk about "spoiling the workingman," but they are growing fewer. A Chicago board of directors, examining the estimate for a new factory to be put up in Wisconsin, balked at the estimates for shower baths and lockers and toilet-rooms. "Is it a gentleman's club you are equipping?" they wrote witheringly on the margin. The superintendent came back: "It is something much more useful to the community; it is a shop for five hundred workingmen." The estimate was O.K.'d without further comment.

There is no feature of the new workshop which gives more satisfaction to the observer than the new

ideas of order which prevail in them. Industry has been slow in learning that order is heaven's first law, and that to break it is to involve yourself in wasteful and exasperating confusion.

The truth has, somewhat late however, entered the heads of some of the most obstinate shop managers I ever met. "We are going to have order in this rolling mill if we never make another bar of iron in the place," I heard the stern manager of one of the big plants of the Steel Corporation say, and he had it — had it in a factory so big they took you around in a railroad train to see it. There was not a shovel-load of dust in the place, though they were daily using hundreds of tons of ore and lime and coke. There was not a bar of pig iron out of place, though there were three thousand men making them.

One of the several great services of Taylor's system of scientific management is the vivid demonstration it makes, whenever applied, of the economic value of order. To appreciate it fully one should see a shop of the old-fashioned type and management in process of transformation. I had such an experience once. The concern was a large and prosperous one which had grown rapidly and had spread in the sprawling fashion forced on the city factory.

An enormous number of different-sized parts were used in the machines put out by the concern, and as is the practice in the average old-fashioned shop these parts, coming from foundry or machine-

shop, were dumped at any vacant space, in the rambling collection of buildings, sheds, and passageways. A man never knew exactly where to find any of the parts of the machine he was assembling. Moreover, he never was certain of finding at his machine the tools he had left there the night before.

It was his usual habit to spend the first half hour or more in the morning getting things together and often rowing with his fellows over tools which he believed they had taken from his bench. This is so characteristic a practice that it is no unusual thing for workingmen to hide their tools on leaving the shop at night.

The expert who was putting this factory on a scientific basis at once attacked the prevalent disorder, installing Taylor's system of handling stores and tools. This system is a wonderful piece of scientific organisation, a delight to mind and eye. Once installed and properly run, it revolutionises a shop. It did so in this case. "Hunting" tools and parts was forever done away with. Everything was in its place, and a responsible person knew the place! Such is the co-operation between shop and office under this method that there was on the books at night a complete inventory of everything needed for the work. This record was self-correcting, that is, there was no possibility under it of running short or over-supplying. It took out of a shop forever that old, irritating, and expensive operation known as "taking an inventory."

The promptness and sureness with which a part can be located under this system I once saw illustrated in an interesting way at the Watertown Arsenal. Lieutenant Colonel Wheeler, the commanding officer, told me to select a piece in any one of the gun carriages under construction, and we would take the number of it to the office and ask the clerk to tell us where that particular piece was. In five minutes after we had given him the number he had located the piece. I think it is not an exaggeration to say that if under the old system such a question had been asked of anybody in the Watertown Arsenal it would have taken days for them to have answered it — if, indeed, they ever could have done so. As there are fifty different kinds and grades of material and four thousand six hundred different pieces used in a disappearing gun carriage, the advantage of being able to put your hand promptly on material and pieces, as well as knowing every night whether you have in stock the quantities of each necessary to carry on work, does not need arguing. The gain to workingmen and to management obviously is enormous.

Scientific management places as much stress on cleanliness as on order, and all the new shops have devices for fighting the particular dirt which the operations produce. One of the most distressing features of cotton mills has always been the lint which is thrown off at every step from the opening of the bales to the weaving-room. The difficulty of keeping the spinning frames from becoming clogged

by this lint has generally been regarded as insurmountable.

When the first cotton factory — so far as I know — was studied for scientific management the problem was at once attacked. The result was a compressed air device for cleaning. All day long a man goes up and down the spinning-room with a hose, blowing dust from the frames and floors. This practice, together with what the spinner himself is able to do, with his brush, has practically removed all the irritating interference with work which lint causes.

Quite as important as the increased cleanliness in this factory is the lowered temperature. By an air-conditioning apparatus fresh air, heated in winter, cooled in summer, and properly humidified in both, is furnished to all departments. What this means to the operatives only those familiar with the old conditions can realise.

A value device for carrying off dirt has been installed in the twine plants of the International Harvester Company. Twine is made from Yucatan sisal. The opening of the bundles fills the room with the most disagreeable dust. I have been told that when Mr. McCormick, the head of the Harvester Trust, first caught the idea of the model workshop, he told the heads of the twine department that he would give them sixty days to get rid of the dust in the opening-rooms. It was not long, considering that for years everybody connected with such plants had said that it was one of the un-

avoidable features of the business. But in sixty days the plant was equipped with a machine which carries off the dust so perfectly that I spent half an hour in an opening-room and came out without any perceptible dust on my dark clothing. This is done by opening the bundles over a perforated floor under which fans play. The dirt is carried down and out, never having a chance to rise in the room.

Disorder and dirt are probably the most wasteful features in industry, but inconveniences are a close second. Scientific management has fully demonstrated this by studying the time it takes a man to perform a task under different conditions. For instance, the old way of putting the parts of a machine together was to place everything on the floor. The workman had to crouch down, or actually sit on the floor while he was assembling the parts which came in the lower part of the machine. Now an adjustable table is provided, so that, as the machine grows higher, the table can be lowered and the workman finds himself always in the position which is least cramped. The result is that he does more work and with less fatigue.

An extensive study of clerical work resulted in adjustable chairs by which a clerk could take seven different positions. This was done solely to remove the nervous tension and fatigue which comes from keeping one position for a number of hours — to make it easier for people to do their work.

In the cotton factory mentioned above the spinning frame has been lifted so that a girl can dress it

without stooping, and a shelf has been added to carry a cleverly arranged spindle-rack. The racks are brought to the shelf at regular intervals by a boy. The girl without stooping changes those emptied for those filled, and the rack of empty spindles goes back with the boy. The girl's back is saved and so is her time.

If scientific management had done nothing else for industry it would justify itself a thousandfold as a system by the strain and irritation it has taken from workers, in putting things to rights, in insisting on cleanliness, and in inventing devices to make work easier and pleasanter.

To those people whose ideas of factories are based mainly on the distressing conditions which investigators ferret out and publish,—there are plenty of them and the obligation to make them known to the public is imperative,—to these people the use of the word beauty in connection with industry seems a mockery. But this is a judgment of ignorance. As a matter of fact beauty is one of the conscious ambitions of the new shop-makers. I do not know anything more encouraging in all the long list of encouraging exhibits in the country than the efforts which old-fashioned plants are making to put a note of cheer and attractiveness into their ugly and harsh settings.

The real beauty of a great many of our factories is destroyed by their ugly surroundings. The approaches and the yards are so disorderly, the roads so bad, and the vacant places so filled with dirt and

debris that any value the building may have is lost. Clean up the yards, put the vacant places into grass and immediately you are conscious that the building is good, perhaps beautiful.

A good illustration of this is in operation at this writing in the famous Homestead Steel Mills. There was a time not long distant when the Homestead Mills seemed to me to be about as good an example of an inferno as the world afforded. The change that has been wrought by paving the hundred or more miles of roads within the yards, by putting in flower beds and grass plots wherever a half dozen square yards could be spared, is amazing.

As for interest in these operations, I defy anybody to find more genuine interest in any branch of a factory's operations than many superintendents and operatives take in efforts to grow grass, shrubbery, and flowers in and around their factories. I have seen scores of gay little gardens, window boxes, grottos, which operatives had made in moments of leisure and to which they gave loving care. Sometimes in the big mills they are in corners so remote that they go undiscovered by superintendents for half a season. I remember one such in the big plate mill at Vandergrift, Pennsylvania.

There are perhaps eleven per cent. of twelve-hour men still left at Vandergrift. They work in shifts of twenty and thirty minutes, intense work which requires an equal rest period. A group of men had used these rest periods in beautifying a corner for themselves. It was a spot perhaps eighteen feet

square entirely surrounded by high walls. They had made here a grass plot with a merry little fountain in the centre. Around it were benches painted a bright green. So unexpected was it, so evident an expression of their need of greenness and gaiety, that one could scarcely see it without a gulp.

But it would never have been attempted if all about the mills the most careful attention was not given to grass and vines and flowers, and if the men were not encouraged to do anything they wanted to in vacant spots. The superintendent at Vandergrift, in fact, keeps up a small conservatory which supplies everybody about the mills who wants them with seeds and plants.

What can be done to create a perfect garden of delight is shown best, perhaps, in this country at the works of the National Cash Register, in Dayton, Ohio. Gardening has become a cult among the ten thousand employés of this enterprise, and their continual spur and teacher is the factory itself, where the most scientific and loving attention is given to the grass and flowers and vines and shrubs which surround and embank the twenty or more buildings which make up the plant.

But what is it worth, this movement toward light, order, and cleanliness and beauty in workshops? What is it worth in dollars and cents? Take the matter of proper shop lighting. How can manufacturers be convinced that they can afford the large initial expense it requires to install a system which is used on an average not over two hours a day?

Mr. Schwarze declares in his handbook that the results of experiments show that it increases output all the way from two to ten per cent.:

"In a certain steel plant, where an efficient lighting system was installed," he writes, "the output at night was increased a little over ten per cent. In order to determine whether this was due wholly to the introduction of the better lighting conditions, the lamps were taken out and for a time the work was carried on at night with the old lighting system. It was found that the amount of work dropped off over ten per cent. When, however, the work was resumed under the improved conditions the men were able again to produce ten per cent. more work."

There is the same relation between output and ventilation as between output and lighting. The Hamilton Watch Company recently of its own free will wrote to a ventilator concern that since the installation of their ventilators the operatives had been doing practically the same amount of work in nine hours that they formerly did in ten. The drowsy hour along in the middle afternoon of which foremen and managers so often complain seems to have been entirely eliminated simply by giving the workers plenty of fresh air. Various experiments have been made, particularly in schools, showing the effect of better ventilation on the alertness of pupils. Some years ago the Board of Health in Detroit, cut off without the knowledge of the teachers, the fans of the ventilating system and observed the results. In twenty minutes the students began to

complain that the room was cold and it was necessary to raise the temperature from 68 degrees to 75 degrees before this feeling of cold was relieved. In forty minutes a number of the students began to complain of headache and in an hour the teacher was obliged to send four or five students home. The fans were then started and in fifteen minutes the complaints ceased.

The Secretary of the State Board of Health for Indiana who has made various experiments with the heating, ventilating and lighting of school rooms declares that the efficiency of the pupils has been increased 25 per cent. by the installation of proper devices. Of course what is true of the schools is true of factories.

Every efficiency engineer will give you figures to prove that money is saved simply in putting the stock-room into order as described above. Mr. George Babcock of the Franklin Automobile Company, where the Taylor System of Scientific Management has been installed in root, stock and branch, says that at the end of 1911 the variation of their physical inventory with their records was $2\frac{1}{2}$ per cent. of the value of the charges handled during that year. Two years after he began to install the system this variation had been reduced to 0.03 per cent.; and a year later to 0.01 per cent.

That such considerations as the colour of walls and ceilings, good architectural features, trees, grass and flowers have a direct stimulating effect on the efficiency and health of the operatives there is abun-

dant proof. In an investigation by the American Museum of Safety, the question was asked of the factory managers whether they had found that their experiments on these points had increased the efficiency of the workers. Seventy-five per cent. of those who replied were emphatic in their declarations that the effect had been good. Here are extracts from some of the letters:

"The better the surroundings the better the work."

"We know by experience that it pays."

"We know that it improves health, therefore efficiency."

"Lawns, trees, etc., have paid interest on the investment many times over."

"Our whole neighbourhood has been improved."

"There is no doubt but that the most efficient men prefer to work where surroundings are most attractive."

"There is a yearly deficit of several thousand dollars on our lunchroom, but we consider the money well invested."

But it is something more than an increase in efficiency the workers in these new shops get. They are getting education, satisfaction, a sense of their own value in the undertaking. I have seen girls transfigured from slatterns to clean and tidy decency; women whose bitter revolt at work performed in ugly and filthy disorder had been changed to cheerful interest; men who had given up the saloon because they were allowed to attend the flower beds. Light,

sun, order and beauty are as powerful preventives of evil as darkness, disorder, and ugliness are incentives to evil.

We complain bitterly at times of the awful home conditions of the new-come immigrants. But if they never see anything better, what can we expect? They tell a story of a Polish miner at Ishpeming, Michigan, who was obliged to spend some weeks in the company's hospital. His home had been the despair of the company's nurse, so dirty and crowded it was. But when the man returned from the hospital the place was immediately transformed. "Clean and nice all the time, now," he told the nurse when she exclaimed at the change. "Clean and nice like the hospital, feel good." The new workshops teach many men and women what the hospital taught this man.

They teach the worker much, but it is the illumination they are bringing to those who direct them that is most significant and hopeful. It is hardly too much to say that these new industrial ideas are producing an entirely new type of employer; one who is almost as much of an educator as he is a maker of things; almost as much a friend of men as he is a "boss." He has discovered that no man or woman can reach and keep the point of efficiency which scientific business requires unless he is healthy, content, and growing. How to keep men and women well and happy is part of his business.

"Welfare work is no philanthropy," says Richard Feiss, of the Clothcraft Shop of Cleveland, "but

a very essential part of the management. With us it is perhaps our most important part. It is just as much a function as routing (order of operations) or inspection. In fact, it is even more important, as it applies directly to the kind of boy and girl that we need and that we are trying to develop."

CHAPTER II

"A FINE PLACE TO WORK"

One of the first impressions of an observer who, free of pre-conceived notions, studies a re-organised modern workshop is that the operatives are getting an altogether unprecedented degree of social life. A little analysis shows that this is the outcome of the new shop activities and ambitions.

Groups of men and women are naturally sociable. Join the crowd that watches a parade and observe the good terms which quickly spread sometimes for miles up and down an avenue. The helter-skelter throng has established relations. They jeer and chatter and accommodate one another. They exchange opinions and experiences. The rudiments of a social and political organisation may easily develop in the course of an afternoon in the accidental group crowding the side of a city block.

Observe how quickly they catch the spirit of the spectacle. They are gaiety itself over a Mardi Gras pageant; but let the demonstration touch the serious and they answer as certainly. It was a New York crowd which gave to the first Woman's Peace Parade the response which carried it. It was a venture of the most doubtful outcome, sure to excite

the indignation of some, the ridicule of others. Its only strength was its touching impotency. Yet throngs of men and women watched it in silent, sometimes tearful, respect. They knew they looked on a prayer, a hope of that which-is-to-come. The amazing sympathy and understanding they gave those marching idealists promises as much for the cause of peace as anything this country has seen since the war began.

The chief promise of groups lies in this natural sociability and understanding. The finest, freest collective work men do develops from it. The failure to recognise and encourage it in undertakings is unintelligent as well as unkind; it reacts disastrously, dulling initiative and hindering co-operation.

In spite of the obviousness of the value of this social spirit, industry has been slow, even stupid, in utilising it. There are thousands of offices, shops and factories in this country where there is no more cohesion between the workers than between the nails in a keg. The force is held together by staves and hoops. Take them off and they scatter. The conditions under which they labour do not admit of acquaintanceship. The managers discourage it. They do not want visiting, planning, talking in their plants, they tell you. True, little cliques may form, two girls or men become friends, but for the most part the men and women work side by side, often for years, without any form of communication.

The modern employer is wiser. He recognises that the efficiency he must have to succeed — if he has

no privilege to carry him roughshod over competition — depends upon the health, interest and co-operation of his working force. He learns that all of these forces thrive naturally in a group of people who find satisfaction in working side by side. They do this when they have common social interests. To foster these interests then becomes a business policy.

It is one which has made enormous strides in the last ten years particularly, though it would be neither fair nor illuminating to treat it as a discovery of this period. If we look for the root of the experiments to promote sociability among working people we shall probably find them in the one secular social institution that early piety and industry tolerated, that is, the annual picnic. The severest of Protestant sects have long admitted the human need of fun to the extent of one picnic a year. Rarely was there a factory in the old days that did not limber up sufficiently to arrange an annual outing for the whole establishment, including wives, babies and friends.

Reluctant as the factory manager may often have been to give the time and the money for the annual outing, it was a well-established opinion fifty and more years ago that they could not afford to do without it. In some mysterious way, at which many sneered but which none could deny, those outings oiled the human machine. Work went with less friction and more interest in the weeks of preparation and of “talking it over.” It was, no doubt, a good thing.

There is no knowing just when a few of the more reflective employers began to see that the interest and spirit awakened by the annual outing was something to be preserved and given opportunities to grow. Nor is there any way of knowing who first appreciated the relation between a field for out-of-door sports and the health and sociability of the factory; he belongs, of course, to the period of the ten-hour day; when men worked twelve and fourteen there was neither the light nor the life to throw a ball. He came with the shorter day and he heads a great and growing succession.

The factory athletic field is coming to be almost as much a matter of course as the sanitary drinking fountains, and where you find the latter you are almost sure to find the former, or its substitute. Even in many cities where the factory is crowded for land, a corner often is squeezed out for out-of-door sports. I doubt if there is an athletic field in the United States which has as much use to the square inch as the girls at the Clothcraft shop in Cleveland give to a bit of enclosed land at the side of the factory. It is not larger than a city lot, but it teems with excitement during noon hours and after the shop closes at four-thirty.

Mr. Feiss will tell you, in explanation of the time he and his associates give to encouraging the use of this bit of land, "I can't afford to have people working in my shop who don't have fresh air and fun." It is the reason he gives for his early closing hours. "I can't afford to have people working after four-

thirty in the afternoon. They aren't sufficiently fit next day."

The Steel Corporation is so convinced of the value of the ball field that it encourages its subsidiaries everywhere to provide them. Probably thousands of dollars are spent annually by the companies for their upkeep, though the general practice is for the men to meet this by an equal, or at least a substantial, contribution of their own. In all the new plants such as that at Gary the ball field is considered as necessary as a first-aid room.

That the corporation is right in the special encouragement it gives baseball is indisputable — what the game is doing for health and sociability in American industries cannot be estimated. It is a poor management indeed, these days, and a thoroughly soured force which does not support departmental nines. As proud a man as I ever saw was the usually unapproachable vice-president of a big factory who, playing on the office team at the annual picnic, had made a "home run." It was days before he ceased talking about it, and when the office would no longer listen he went to the floor and lived it over with Jimmie B., a weaver who, in spite of this heroic deed, had won the game for the operatives.

All over the land you can duplicate the amusing experience of the hero of Philip Curtiss's story "The Ladder." He had applied in a big concern for work. There was no opening until he chanced on an employé who had known him in his baseball

days. The acquaintance promptly passed his information on to the employment agent. That worthy as promptly reconsidered his decision.

"What did you tell him about me?" the hero asked.

"That you were the best second-baseman in the State."

There is many a factory where operators and operatives would consider this a sound reason for employing a man, and why not if it is considered a sound reason for admitting a boy to college?

The rivalry between the teams of different plants and factories is coming to be like that between towns and schools. One of the most exciting series of games — outside of those of the leagues, and the big colleges — of which I know, is that between the forty or more teams of miners in the Frick Coke Company in the Connellsville District of Pennsylvania. It is doubtful if there are ever more than two or three men on a team who speak the same tongue, but that seems not to interfere either with their efficiency or their enthusiasm.

In the fall of 1913 I visited the coke towns a few days after the finals had been played. There had been a general holiday. The five thousand spectators were made up of the miners, their wives and children and the officers of the company from the president down. It had been a great day, and everywhere I went I heard it discussed. The hero of the district was an Italian miner who had won the final victory for his nine. At that particular

moment you could not have pried a man out of that company! Moreover, the company could have counted on every man's co-operation in any reasonable proposition.

While baseball is easily the favourite factory game, as befits its national position, there are many concerns in which the variety of sports equal that of any college or athletic club. I know of one Rochester factory in which they play baseball, lawn tennis, bowling on the green, volley ball, croquet, soccer ball and quoits. Last winter the bowling team won the championship of the Industrial League of the city of Rochester against teams from all the principal establishments in the town.

So thoroughly has the industrial athletic field demonstrated its usefulness that no intelligent employer of labour familiar with advanced practices thinks to-day of building a new shop or factory in town or country without some provision for an out-of-door field or an indoor equivalent. Take a modern factory like the new one of Brown and Bigelow near Saint Paul, Minnesota. In building, the concern provided for some twenty acres of open space around the light, airy, comfortable factory it put up. In this space all the sports which interest the force are carried on. The director of the service department of the plant tells me that all of these undertakings are managed by the employés themselves through a club to which everybody belongs by virtue of his position as a worker.

Once a year nominations are made for officers of

the club, and all employés have a chance to ballot for their favourites. Besides the officers, a governing board is elected in an advising capacity. Several of the present members of the governing board are workers at bench or machine.

The officers run all the club affairs, including a benevolent association and a dining-room; they prepare for the annual picnic; out of their treasury they furnish balls and bats for the baseball teams; they pay for the use of the bowling alleys on which once a week during the winter twelve teams from as many departments compete for a loving cup presented by the firm and for individual prizes offered by the clubs; they pay for the tennis courts and skating rinks. Brown and Bigelow's co-operation in this consists of furnishing space, light, heat and steam. Every time an employé is tardy, a fine of ten cents is imposed, and this money is turned into the club funds.

These organisations give wonderful training in collective action. Indeed, they are for thousands of people the only chance they have ever had for free, conscious co-operation. It is actually exciting to watch men and women develop through these organisations, not only in health and good spirits but in what they have never suspected they possessed—the power of leadership. A man or woman who has always been shy, sulky, uncommunicative, an indifferent and unambitious worker, will blossom into a leader in sports or in "getting up things." There

is an immediate change in his attitude toward his work.

An alert manager recognises at once that he has here the making of a foreman. His task is now to watch, give encouragement and instruction, and at the right moment advance his find. Nothing is more valuable to him, more essential, than such discoveries, if he is trying to manage his business scientifically. The large force of instructors and function bosses required in a shop under scientific management can come only out of the factory itself, to get the best results. The strength of the system lies largely in developing workers to do higher-grade work. But where there is no more sociability than in most shops it is a slow and sometimes most discouraging task to find this material. Factory clubs and amusements constantly bring it out. It is a precious thing for the business, but it is life and future for the worker.

As a rule the provisions for out-of-door sports are modest enough, though there are a few plants in the country which almost take one's breath away by their magnificence. The National Cash Register has gone furthest, probably. In addition to baseball diamonds, tennis courts, children's playgrounds and clubhouses near the factory, Mr. Patterson keeps up for his employés on the outskirts of Dayton and within easy reach by a five-cent ride on street cars one of the loveliest small parks in the country. It has been handled with rare intelligence and, an un-

usual thing in our parks, originality. Surprises await you at every turn in "Hills and Dales," as it is called — devotion to birds, devotion to flowers, an instinct for views and "glimpses." There is a handsome clubhouse run by the employés, a girls' club and, most attractive of all, several camps furnished with everything necessary for instant use for whomsoever may apply!

The United Shoe Machinery Company is another concern which has arranged lavish out-of-door life for its five thousand or more employés. Close to its Beverly, Massachusetts, plant it has three hundred acres of land, the Charles River running through them, where every conceivable land and water sport is encouraged.

Elaborate equipments like these lead those who are unfamiliar with the hundreds of small ventures over the country to believe that the work is merely a "frill" of Big Business, one of its advertising schemes for reconciling a hostile public. No doubt some skilful advertising has been done through these ambitious undertakings, but this is certain — unless they are used they make a concern ridiculous. Deserted, they prove that something is wrong with the motive in their establishment or the method of their management. When the fields and diamonds and courts and roads are thronged at noon and night, on holidays and Sundays, we may set it down as a real thing, whether elaborate or simple.

As far as results are concerned it doesn't much matter whether it is elaborate or simple. The spirit

is the life of it, not the machine. Neither the National Cash Register nor the United Shoe Machinery Company could persuade or force their employés to use their courts and grounds and clubhouses as freely as they do if they were merely an advertising scheme. They are used because the primary reason for their existence is the health, efficiency, and social pleasure of the workers. They “pay” the firm, or they would not be supported by two as hard-headed concerns as these; but they “pay” the operatives even more.

Big Business has no monopoly of this class of work. It can absorb a great deal of money, but it needs almost none. Indeed, it depends for success on that which money cannot buy — sympathy, understanding, sound humanity and sound sense. Nor did Big Business discover the value of the social interests of its employés to its own stability and its efficiency,— like almost everything else it possesses it took over what it found, and developed it on a large scale. Small business originated the work, and it is small business which gets the finest results, as a rule, both for itself and for its people.

What *are* the results? How do you know them? When the army of employés rush back to their machines after a noon hour of comfort and play, fresh, zestful, singing, when they come back Monday morning or after a holiday brown, interested, full of talk of matches lost or won, of excursions, picnics, adventures, the wise man knows he is reaping the reward of his investment. When men and women

tell you with enthusiasm: "Gee, but this is a fine place to work!" you know they are reaping the benefits of his investment. But what they get is by no means bounded by the factory walls or ended with their period of service. They are being educated in two things most essential to themselves and to the community, two things in which most of us are weak. They are learning how to be sociable and how to play and to enjoy people. These are permanent possessions.

The great body of people in this country do not know the value nor the delight of play. They work hard and cheerfully as a rule through a long day, and depend on sleep and food and what they call "taking comfort"—that is, sitting around in a more or less somnolent state—to fit them for the next day. They have never learned to take regular exercise, to seek a stimulating change of ideas, to go out after the new. They are not curious, eager or adventurous in their off hours, though they may be all that when at work. Life is but a collection of habits. If the habit of seeking recreation and social life has never been acquired, the effort to do so is a burden to the flesh and a worry to the spirit. Industry is fixing the habit in thousands of men and women. One of the convincing proofs of this is the extent to which in many parts of the country operatives, either in groups or as individuals, are providing simple quarters within easy reach of their work which they can use at will. All those who travel much become familiar with them: gay little

shacks grouped in pleasant groves, log cabins perched on mountainsides, tiny houseboats anchored along river banks, bungalows by the sea. They are multiplying amazingly, particularly through the Middle West. It is one of the pleasantest exhibits of our present world, a proof that pleasure and health, as well as the means to get them, are being more and more widely distributed in the land.

One thing leads to another in groups. If the start is made there is no end to the ramifications. The men of a factory who have come together over baseball in the summer want a bowling alley, a card-room, a reading-room for winter, and they often ask the management for it. This is the sound and sure beginning for the factory clubhouse, an institution which is doing as much for factory social life as the athletic field. There are many such clubhouses, which buzz from morning until night with activities of every kind; but let no one imagine that it was merely the building and machinery which caused spontaneous interest. Most of these have grown from very small beginnings.

Ten years ago a dinner was given by the new president of the Commonwealth Steel Company of Granite City, Illinois, Mr. Clarence Howard, in the little frame building then used as a factory eating-room. At this gathering a club called the Commonwealth Fellowship was organised. It now has a thousand members. Its quarters have expanded into a handsome and commodious brick building and its activities take in every conceivable interest of the

plant and the working force. If one wants proofs that the cultivation of good fellowship on the highest Christian lines is practical in a factory, he ought to study the co-operation the Commonwealth Steel Company gets in its undertakings.

Here is an example of a character so unusual that it called forth the hearty commendations of the *International Moulders' Journal*, though the plant is an open shop. It was desired to make certain changes in the foundry in the interests of efficiency and economy, and the company offered to share half of the time saved with the moulders. In the early winter the men were informed that the change had saved several hundred dollars and that their half was ready for them. How should it be distributed? Times had been dull in the plant and a number of men had been idle. The moulders knew that the company had set aside a fund to aid these men. Accordingly they asked that the money coming to them be applied to this fund. The company answered by turning over the entire sum.

The clubhouse or club-room has generally as its first and possibly most important service the furnishing of a place in which to lunch. The lunch-room serves an industry in much the same way that an athletic field does. The day will come, I believe, when the failure to furnish proper lunching places for a working force will be looked on as one of the most uneconomical practices of the innumerable number with which industry burdens itself. People who eat cold meals from the corner of their desks

or machines do it at the expense of their afternoon efficiency. I never see this untidy, cheerless practice in operation that I do not feel like suggesting to the officers and directors of the concern tolerating it that they lunch for a week in the same place and from the same cold food, and then test their afternoon efficiency.

Moreover, it is a waste of an excellent social opportunity. There is no way in which men and women more quickly come together than over common meals. “You can’t fuss with the fellow you eat with,” said a man at the Commonwealth. If they run their own lunching place, electing officers and deciding on expenditures, as many do, so much the better. If the officers and superintendents share the lunch-room even occasionally, the effect is excellent. At the Commonwealth Steel plant the lunch-room is even doing something to unsettle one of the most fixed of American — not European — prejudices. There are several coloured men in the factory. The locality, the Egypt of Illinois, has always held the extreme Southern view of the social place of the negro. In arranging the lunch-room separate tables were provided for white and coloured; but I was told it was not infrequent for a white man deliberately to take a coloured man’s table or invite him to his. A little thing, perhaps, but it shows the quality of the fellowship which pervades the place.

It is usual to turn the lunch-room into an amusement hall after the meal is over. I once lunched

with the president of a big Rochester manufacturing concern in a room probably one hundred and fifty feet in length by fifty feet in width filled with small tables and served in cafeteria fashion. The sides of this room were practically of glass. From the great windows one looked out on eight acres of ground equally divided by this wing. Great trees, beautiful shrubs and a most perfect sward, tennis courts, bowling greens, flowers and vines made it as lovely a place as one could ask. These operatives lunch in a place as beautiful as any resident of this beautiful city.

There were probably three hundred men and women using the room the day that I lunched there; the excellent and abundant food was given them at cost; my lunch cost fifteen cents. It was no better or cheaper than that I have eaten in scores of lunch-rooms between the Mississippi and the Atlantic, the rooms varying in size from big halls like this, sometimes handsomely decorated, to little rooms in a mansard roof of a city building. The lunch over, the groups naturally turn to amusements. In this particular place some fell to playing cards or chess, others to talking, a few to reading, many to dancing, or listening to the music. On a pleasant day the whole company would have gone outside to games or to walk in the grounds.

The effect of all these varied free activities on men and women who are employed on machines, as such vast throngs are in these days, is blessed. It

breaks the intolerable monotony. The monotony is one of the most dangerous and cruel features of modern manufacturing. It is probably the chief cause of the unstable pay roll. The worker is so limited in his interests that his mind turns on his own condition and situation. The machine becomes his enemy. He cannot endure it. He breaks away, to repeat the experience in different factories. He becomes a floater. It is either that or settling into dull endurance. But give the operative something to think of, something related to his work, and the monotony and fatigue are relieved.

The wise woman who directs the social activities of the Pilgrim Laundry of Brooklyn said to me once that no girl could do two thousand collars a day if she didn't have something interesting to think of, something which concerned herself. She sees to it that there is always something pleasant planned for the girls to do. It is the thought of a play they are to give, a dance, an excursion that keeps their minds alive and happy while their fingers carry on the rapid work demanded of them.

“ You don't know how changed life has been for me since Miss A—— came here and showed us how to organize clubs and things,” a fine sober girl said to me in a white goods factory once. She had been pointed out as the editor of the factory paper, a lively little monthly full of the activities of the place, and had stopped her machine to answer my questions. “ You see, now I can think of the paper

and what I shall put into it while I do my work. Before, I had nothing to think of and I did get so tired every day."

"Do you do as much work?" I asked.

"More," she said, and pulled out the little account book to prove it. "It goes easier; all the girls say so, too."

The activities which grow up in these industrial groups are by no means limited to amusements and sports. They are frequently devoted to self-improvement. Sewing, domestic science, stenography, arithmetic, literature, technical branches related to the industry, spring up naturally as the force becomes acquainted. The benefit of this to the worker is no more bounded by his term in the factory than is the benefit that comes to him from out-of-door sports. Here again he has learned something about himself. He has found ways of enriching and enlivening his life, and the knowledge cannot be left behind if he leaves the factory. He is a better, happier, and more efficient citizen for his term of service there.

The factory profits from this improvement while he stays by it. He profits throughout his life.

There are of course multitudes of people to argue that all this is none of the employers' business, that people find what they want, that there are enough opportunities everywhere for pleasure and improvement if men and women have the energy to look for them.

Why establish playgrounds, ball grounds, parks,

they ask, when every city does something of the kind and they are never fully used?

Generous and thoughtful as a city may be in scattering open spaces it cannot meet this particular need. The worker requires a space at hand where he can put in his short noon and evening leisure at play in factory uniform. No city can provide an open space for each factory. Grand Rapids, Michigan, comes as near to doing this as any town I have seen. It aims to give a playground within a half-mile of every child, and it certainly has an open space within the same distance of almost every factory; but this is far from meeting the demand I am talking of. Rochester, New York, has a large and well-distributed system of parks, but there are several factories within the city limits which have provided athletic grounds. The Eastman Company has in its Kodak Park on the outskirts of the town a beautiful setting of turf and shrubs and vines for its great factories, and scattered throughout the space are tennis courts and ball fields.

The top floor of the factory lunch-room has been turned into an assembly hall which will accommodate many hundred people. I once attended a party there, given by a group of factory girls. There were literally hundreds of couples on the floor, among them many of the officers and directors of the plant. Their wives were with them. Mr. Eastman was present with a group of friends. This is the custom of the place. It was as merry and democratic a party as any one could wish.

Many contend that factory amusements are a wasteful overlapping of the social activities of churches, settlements, municipalities. My own observation is that there is always more demand for healthful amusements than supply. There is a factory district in New York City of not over twenty blocks where there are ten thousand girls and women at work. Outside of the cheap dance halls, movies, and theatres there is not in this area provision for evening sports for over one thousand, if that.

Neither church, family, nor state is deprived of any opportunity or support by the social activities of the factory. They are all improved and stimulated by them. As for the established social centres, they will lose only when they are less inviting, less stimulating. If they are undemocratic — that is, absorbed by sets, as often happens — they will lose. If their activities smack of condescension, they will lose. If they are philanthropies, not encouraging pleasure for pleasure's sake but that they may teach something indirectly, they will lose. Otherwise, they will gain.

Leadership, kind, wise, inspired by the conviction that factory and shop under modern conditions furnish one of the finest opportunities in the world to develop people both as individuals and groups, is essential for the work. Such leadership has brought to more than one factory such a spirit of happiness that men and women again are singing at their work. There is no reason they should not.

The machine is an almost sentient thing. Its roar and clash and whir to him who has learned to know it has its own strange rhythm and song. The worker who has come to it in health and courage has no quarrel with his machine. Indeed, he often sings to it and with it.

One of the happiest things that I have seen in factories on which an intelligent scientific management had laid its always kind (if always firm) hand has been the singing of girls over their machines. But they cannot do it on the long day, on poor pay, or on hearts to which joy is a stranger. They will do it only when they have come to feel and to say, “My, but this is a fine place to work!”

CHAPTER III

THE GOSPEL OF SAFETY

The new workshop is a safe shop. The killing of men and women has always been accepted by the world as very much a matter of course. "The sea is hungry, we must bear many sons," the wives of the Breton fishermen say; and so say the women of the cotton mills and iron furnaces, the match factories and railroads.

Sacredness of human life! The world has never believed it! It has been with life that we settled our quarrels, won wives, gold and land, defended ideas, imposed religions. We have held that a death toll was a necessary part of every human achievement, whether sport, war, or industry. A moment's rage over the horror of it, and we have sunk into indifference.

There is a new industrial philosophy abroad which breaks with this idea: Nothing is so valuable economically as the man. To injure or to kill him is to destroy the one essential element in the scheme of world-wide civilisation and prosperity. He who can produce at the top of his bent can consume equally. The stronger, the longer lived, the happier, the more ambitious he is, the better for mankind. Injury and death are the fruits of igno-

rance, recklessness, and greed. A death toll is no part of a properly managed industry. It is wasteful, wantonly wasteful. The saving of life thus becomes an industrial issue. In more than one American industry it has become a gospel — a gospel which, defended as a sound economic policy, is practised with the whole-heartedness and zeal of a religion.

Under the impulse of this new notion museums of safety have been established; organisations nationwide and including representatives of every species of industrial undertaking have been formed; congresses have been held; a literature is being rapidly evolved; educational campaigns are on foot. It is a new movement upon us, one devoted to the ennobling and thrilling task of saving life.

How did it start? To answer that question rightly would take us too far afield. For our purposes the origin of its motto, "Safety the First Consideration," is sufficient. I stumbled on that three years ago at the mouth of a Pennsylvania coal mine. I had spent a couple of days in and about the shafts, the engine and pump rooms, the stables and galleries of the mines, and in visiting the miners' homes.

It was a type of mine and of miners' village that I had been fairly familiar with twenty years ago. The contrast was so great that I was filled with joyful amazement. I had seen galleries lighted with electricity, where I had once known only blazing torches. I had found men equipped with the

very latest German electric mining lanterns, where before I had been familiar with smoking oil lamps stuck in the cap. I had seen comfortable stables below ground filled with fat mules and horses, and talked with a stable boss who gave a bonus to the man who was kindest to animals. I had found trained rescue squads in every mine, and had heard the president of the company explode violently at the idea of superintendents depending upon them: "To —— with rescue work. *Prevent accidents!*" This, in contrast to a time when, if there was a rescue, it was made by ignorant volunteers, and to a president who piously opined that death and mutilation were the will of the Lord.

After these observations I was not surprised to find at the head of a code of rules posted about the mines, and printed not only in English but in several other languages:

"SAFETY MUST BE THE FIRST CONSIDERATION"

It was not a new order. It is at least twenty years since Thomas Lynch, then president of the H. C. Frick Coke Company, had made this rule. Not the least of the values the Steel Corporation received when in 1900 it absorbed Mr. Lynch's concern was the slogan "Safety the First Consideration"; though if anybody at that time had suggested to the makers of that aggregation that the little phrase had a value they would probably have met with derision.

Certainly, if the directors of the Steel Corpora-

tion had been told ten years ago that they would soon be spending three-quarters of a million of dollars annually in accident prevention, would be giving of their own time and that of hundreds of employés, that they would be running hospitals and a museum, publishing books and pamphlets on safety and sanitation, they would have resented the allegation as a reflection on their business sense. Mr. Gary had difficulty enough in 1900 in committing his directors to a policy of publicity. If he had suggested the present policy of safety his unfitness for the position would have been conclusively demonstrated! "If I had asked five years ago for money to do what I am urged to do to-day by the directors of this concern," the superintendent of a big rolling mill once said to me, "I would have been discharged on the spot."

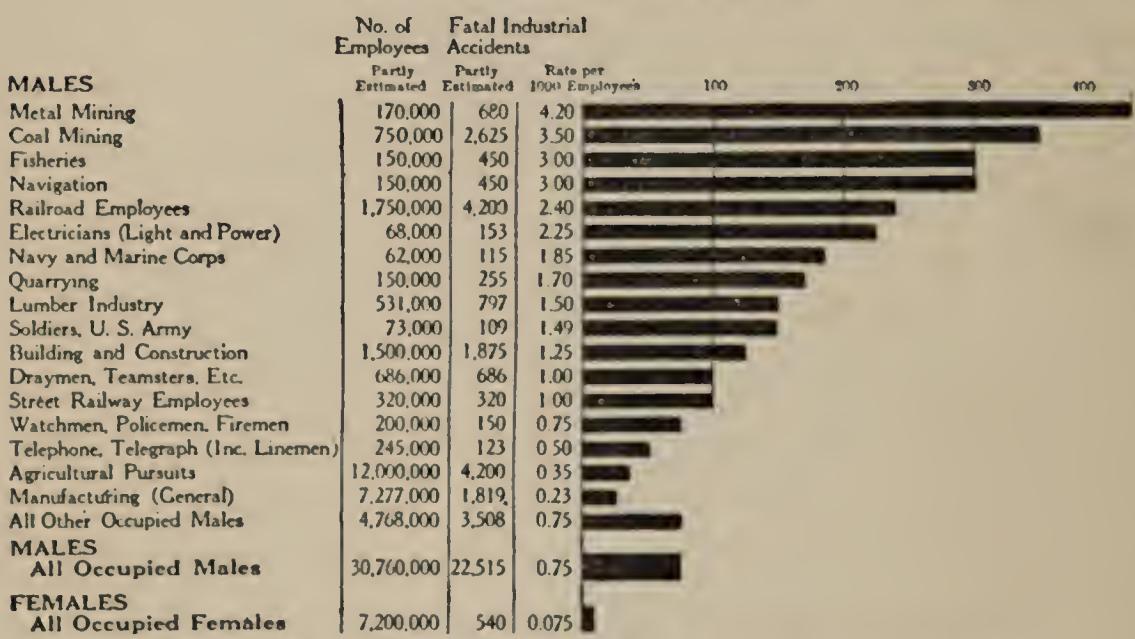
But the idea had long been knocking at men's minds. It had shown itself in state legislation, amateurish and general laws to be sure, amounting to little more than orders to guard machines, but forcing on those industries at which they were aimed the necessity of studying the causes of their accidents and, as far as possible, devising safeguards.

Nearly all of the first safety legislation concerned itself with iron and steel and its manufacture. It was time! This iron and steel industry has a terrible death roll charged to it. What more frightful record of the havoc it has wrought than the present boast of the Steel Corporation that "each year there now escape serious or fatal injuries over 2,300 em-

ployés who would have been injured under conditions existing in 1906." This, on a pay roll of 200,000! This means what? Why, that before 1906 — ten years ago only — over one per cent. of its workers were killed or seriously injured; that since 1906 they have saved thousands of men from death or mutilation.

Fatal Industrial Accidents

Estimate for the United States for 1913



Note.—Approximately there are 25,000 Fatal Industrial Accidents per Annum in the United States and 300,000 Serious Injuries

The railroads have a record even more startling. In the year ending June, 1913, there were 10,964 persons killed on them and 200,308 injured. Yet neither iron and steel, nor the railroads, have the highest death toll. The table above — the work of that careful statistician of the Prudential Insurance Co., Dr. F. L. Hoffman — shows that metal mining, coal mining, the fisheries, navigation, all kill a larger number of men per thousand employed.

However, it was at manufacturing that the first safety laws were aimed. If machinery could be made danger proof there would be no accidents, and so there began an examination of wheels, gears and belts and hammers, of every point, in fact, where a man might possibly be trapped. Each shop worked out its own devices; the conviction of each that it has devised something more practical than any competitor is general. I have listened to the hottest arguments on the merits of saw protectors, belt and wheel guards.

One of the finest points about the work is the fact that almost nobody devising protective devices has consented to have them patented. Not long ago I went through a big manufacturing plant in Wisconsin. There were a number of ingenious safety devices in use, all new to me, the inventions of the safety expert of the plant. "Why do you not have these patented?" I asked. It was the same answer that I had received again and again: "I couldn't do it. It's to save life. If anybody can get any help from them he is welcome to it."

The Steel Corporation opens its Museum of Safety in New York to everybody. It freely gives to all inquirers drawings of the various apparatus it has devised. It also distributes on request copies of its "Standard Requirements of Safety," a volume embodying the experience of its subsidiaries in preventing injuries. "This isn't the kind of thing to make money from!" they'll tell you.

This private work is proving rich material for

legislators. It is giving them definite information as to what they should require, something impossible otherwise for them to know. In Wisconsin in the last four years the Industrial Commission has published a series of bulletins on various phases of safety, in the making of which the experience of many concerns, big and little, both within and without the State, has been utilised.

The method of procedure in preparing these bulletins is the same as that employed in fixing the regulations for shop lighting. Take, for instance, their bulletin on elevators. All the experience on the subject available in the country was gathered by the commission and laid before a committee made up of manufacturers, of labour representatives, and of Mr. Price, the commission expert. They moiled and toiled for six months; but when they had finished their work they had a standard elevator which the heaviest member of the committee, a manufacturer weighing over two hundred pounds, believed could not drop far enough to injure *him*. It was the first time that a really safe standard had been set.

Since the Wisconsin orders were issued it has been the general practice of manufacturers in this State to specify in the contract with the elevator companies that the elevator must conform to the standards of the commission and must pass inspection before it is paid for.

That manufacturers are going to require those from whom they buy machinery to conform to safety

standards has been certain from the beginning of the safety device movement. Over four years ago Mr. Luther D. Burlingame, the chief draftsman of the Brown & Sharpe Manufacturing Company of Providence, a shop where safety has long been a matter of real concern, said in an article on Factory Safeguards: "I believe we shall soon see the time when one of the elements entering into the question of which of rival makes of machines will be purchased, will be: Which is best guarded?"

That time is rapidly coming. Since 1909 the Steel Corporation has had a man in every drafting-room checking all blue prints for safety. Minnesota has a law that every machine coming into the State shall be properly guarded. In the last two years I have walked through miles of store-rooms where every machine had guards as a matter of course. At the last safety exhibit in New York City, scores of safety devices were exhibited by private concerns. In fact, a new branch of industry is fast developing out of the safety crusade.

That lives are saved and injuries prevented daily by these devices is true. Not many months ago I stood watching a saw at work in a big Western plant, when suddenly the heavy vertical belt broke with a vicious snap. It was protected, else the man at the saw would certainly have been killed or seriously injured. Rarely have I been through a factory that I have not had similar demonstration of the value of the guards.

But when industry had really set its mind on the

question of accidents, and begun to analyse causes, it saw that, while unguarded, improperly built, and improperly placed machines did work havoc, they were by no means responsible for the majority of accidents. The great majority came from trivial causes: slipping hand tools, falls, stumbling, the failure to get out of the way of moving things like cars and cranes. In a careful investigation of 100,708 accidents the Steel Corporation found that 44.93 per cent. occurred in hand labour where no safety device was possible. It was surprising what a large percentage was due to improper clothing of workmen: long-sleeved jumpers, loose neckties, and loose hair. In all the shops there began a crusade against these things. At present no factory issues a book of safety rules and regulations without including some particular orders about the kind of clothes a man should wear.

An industry which has always had a heavy percentage of accidents is the foundry. Out of 5,421 accidents in Wisconsin in a recent year, distributed over 26 industries, 16.66 per cent. were in foundries and metal works. The only industry outstripping it was lumber and its manufacturing. The bulk of these foundry accidents were burns caused by the spilling, the overflowing, or the exploding of molten metal. At least 70 per cent. of these burns were on the feet and legs, and in a majority of these cases it was found that they would have been prevented if the workman had worn congress gaiters and hard cloth jean trousers. Brown & Sharpe of Provi-

dence, Rhode Island, have for several years sold their men the proper foundry shoe at cost and advised the correct trousers. All of the foundries which are taking up safety work are following this practice. One foundry of which I know claims that its accidents were reduced eighty-five per cent. by compelling the men to wear congress gaiters.

The foundries of the Commonwealth Steel Company at Granite City, Illinois, have been paved throughout in the interest both of efficiency and safety. The difference between going about in a foot or more of soft dirt, such as usually overlies a foundry floor, and on this pavement, is that of travelling on good or on bad roads. A peculiar danger in the foundries of this company arises from the quantities of wire in short lengths used in reinforcing their great steel castings. Fragments are scattered everywhere. To remove these a great magnet is run at regular intervals over the pits and pavement, in a fashion at once thorough and magical. The unseen force picks up these thousands of pieces, though often buried out of sight.

Of course the risks, both from machines and clothing, are entirely different in different industries. In the foundry it is the molten metal that the feet must be guarded against. In the tannery it is tacks! At one stage of the work the skins are fastened to frames by tacks at least a half-inch in length. When these skins are jerked off, the tacks inevitably are scattered over the floor and men frequently run them into their feet, with the danger of infection.

To meet this, Pfister & Vogel of Milwaukee employ a cobbler, whose business it is to see that the soles of the shoes used in that department are tack proof!

In a cotton mill I visited not long ago I found the industrial nurse carrying on an educational campaign among the hundreds of girls and women on the subject of tight-fitting dust caps and short-sleeved work aprons. She was depending for her ammunition not only on the danger from loose hair and loose clothing but upon the protection from dust and oil which such a uniform gave. In the sewing classes for the girls which she had introduced, the cap and apron were made regularly. The innovation was winning its way slowly; but the fact that perhaps fifty girls had adopted cap or apron, or both, in a year seemed to the nurse, wise in the ways of human beings, an encouraging result. It was.

The crux of the safety movement is not in inanimate things. It lies with the men and women concerned. The conclusion of all those who have been active in the work is that of the Wisconsin Commission:

One-third of the accident reduction may be made by safeguards.

Two-thirds must be made by inspection, education and organisation — that is, by the care of men.

Take the experience of the head of the Steel Corporation Bureau of Safety and Sanitation, Mr. C. L. Close — it is typical of that of scores of men in

various industries. About eight years ago Mr. Close was sent out by the National Tube Works to see if he could reduce the accidents in their thirteen plants.

Almost at once he saw that the machine guards were but a small part of his problem. He saw it demonstrated again and again that the best devices in the world might be installed, and yet terrible accidents happen from reckless or ignorant handling. In spite of the unusual danger of working with molten metals and in shaping red-hot iron and steel into bars and plates, he found men who seemed to prefer taking chances to taking care. In numberless ways men repeatedly expressed their contempt for caution. One of the most frequent signs of their disapproval was battering the illuminated or coloured safety mottoes and directions which were scattered through the plants. I have several times seen these signs printed in four or five languages badly mutilated — the work of defiant and contemptuous labourers. This may have expressed their attitude toward caution, or it may have been an expression of dissatisfaction with a boss, or the company, or life in general.

At all events, it was very soon evident to Mr. Close, as it was to other casualty agents of the corporation, that a campaign of education among the men must be carried on. They must be taught to respect safety and to obey the rules laid down to insure it. It is at this point that well-intentioned employers have often dropped their efforts to make

life safer and more tolerable in their factories. Why provide shields for buzz saws if the workman is going to take them off as soon as his foreman's back is turned? Again and again I have heard this buzz saw quoted. It is almost as familiar as the reason for not putting bathtubs in the labourer's cottage — somebody once found a bathtub filled with coal! We are all slow in learning that men must be taught.

The very indifference and hostility of the men seem to have put the safety agents of the Steel Corporation on their mettle. They made up their minds that caution must be taught. Probably the most powerful factor in their educational campaign was the growing respect the men saw given to the matter of safety by their foremen and superintendents. These hard-worked individuals may be forgiven, if at the start they looked on the undertaking as "a sop to the public." Their first business had been to produce tonnage, their great ambition was to produce more tonnage than anybody else was doing. If they maimed or killed a man they accepted it as a part of the day's work, as we, the public, accept the daily slaughter by our automobiles, our theatre fires, and our bursting dams.

What they soon discovered, however, was that safety was business. A multitude of things in the plants of the corporation impressed this upon them. They saw the company spending tens of thousands of dollars in mechanical safety devices. They and their crews were offered rewards for suggestions,

and frequently large sums were paid for ideas which the "safety men" considered practical. They heard of safety conferences at the steel company's headquarters in New York and finally of a Corporation Committee which was to act as a clearing house for all that they and the other plants discovered.

From time to time members of this committee appeared, and they heard discussions over the most practical netting for guards; possible prevention of explosions — scores of matters which, it is probable, they never before had heard spoken of by a superior. And if they had an accident, investigators appeared, the cause was found, means to prevent a repetition were devised. Safety was an issue. Something they must take hold of hard if they were to keep their rank in the plants. The further the work was carried the more sensible Mr. Close and his colleagues became that safety was up to the men; that they were the best inspectors and guardians. To organise them, to instruct them and to inspire them with safety enthusiasm, they concluded to be their chief function. The outcome of this undertaking is one of the most remarkable pieces of co-operative work which we have seen in industry in this country. The entire Steel Corporation, from the New York end to the remotest mines of the West, is in this organisation. Each department in each plant has its safety committee, and always these committees have on them one or more men from the ranks. During 1913 there were 7,300 employés who made inspection or served upon com-

mittees. These employés are changed frequently, so that in course of time each man in the plant will have served. The same practice prevails on the Northwestern Railroad.

Their success in this organisation has been remarkable, and this has been very largely due to their own enthusiasm. This enthusiasm has been a gradual growth. Take Mr. Close's own case. I doubt very much if when he was first sent to the National Tube Company's Works as a safety inspector he relished the idea. It possibly did not seem to him a man's job. Moreover, he was in the line of promotion, and such are the chances in iron- and steel-making for those who have reached the point where he was that he might fairly have hoped to hold a position of large responsibility. At the moment, too, he probably shared the fatalistic opinion that accidents are inevitable, and that you must take yours like a man when it comes. Whatever doubt lurked in his mind at the start, whatever callousness toward accidents he may have harboured, they have long since been submerged in one of the most absolute faiths in a work I ever encountered, coupled with an enthusiasm as contagious as it is genuine. Safety in steel-making has put all ideas of ever making steel again out of Mr. Close's mind — all he wants in life, apparently, is the opportunity to spread his gospel. And he is but a type of many men in the safety work of the country's industries.

It took time and patient work to educate foremen and superintendents to this belief in and en-

thusiasm for safety. It took time to educate any considerable force of the men. Every human appeal has been made in the campaign. Good results have come from arousing a spirit of rivalry between different departments. Score-cards are kept, and "How's your batting average?" is almost as acceptable a question in the Illinois Steel Works applied to safety as it is to baseball. At one of the mines of the Frick Coke Company I saw a superintendent almost in tears because his rescue squad, which two years before had taken a first-prize in an international contest held in Washington, had lost its place in a local contest by one eighth of one per cent.!

The safety bulletins published and circulated in these plants give these records, of course, and the men watch them eagerly. They print, too, descriptions of accidents and near accidents which, simply as problems, interest the workmen and of course quicken and instruct their wits. Here are a few samples drawn from the admirably edited bulletins of Mr. Robert J. Young, the head of the safety work in the Illinois Steel Company:

DESCRIPTION: The injured man and fellow workmen were on a lean-to, repairing a stack. The yard crane runs close to the lean-to, and the three men were standing and leaning their arms on the crane runway. The crane came along, two of them got out of the way, but the third man allowed his arm to remain on the track, and owing to the guard on the crane wheel having been broken the day before this man's arm was caught, fracturing the arm so badly

that it was necessary to amputate between the shoulder and elbow.

SUGGESTION: Investigation shows that the breaking and dropping off of the crane guard had not been reported. Investigation further disclosed that had this guard been in place this accident would not have happened, and I desire to bring this to your attention for the purpose of showing the importance of having our crane wheels guarded, and the prompt report by the craneman on blanks provided, when safety devices are out of order.

The department of "near accidents" is conducted in the same fashion. Every issue contains a list of "known cases where safety devices have prevented accidents."

Here are samples:

When Blast Furnace No. 10, South Works, was blown out, it was the last furnace in a battery of six to shut down, and because of the danger of a serious explosion under these circumstances the dust catchers and furnace were railed off.

There was a very serious explosion, wrecking the central dust catcher of No. 9 and 10 furnaces. Because of the precaution taken by the Blast Furnace management, no one was injured.

Mr. Murray, superintendent of the spike and bolt factory at the Joliet Works, reports that last month an emery wheel 22 inches in diameter, 3 inches face, $1\frac{3}{4}$ -inch hole, safety shaped, cracked through the centre while running 1,100 r. p. m., but that the pieces were held in place securely by the safety collars and no one was hurt.

Frequently it has been wise to carry on a special campaign for or against some practice hard to correct or break up. Take the wearing of goggles: It is as difficult to persuade men to wear them as it is to keep the guards on circular saws, yet a number of necessary tasks, such as grinding metals on emery wheels, chipping metals by hand, pouring babbitt, handling molten metal, are constantly injuring eyes. Good graphic work to show the extent of these injuries and the ease with which they might have been avoided has been done by Mr. Young in the bulletin. He has published a page of ninety-one pairs of goggles shattered or injured by flying steel chips in the plants of American steel foundries in a period of three months. Often a gruesome sense of what might have happened to a pair of eyes is driven in by picturing a single pair of goggles battered by an accident.

Often when a man cannot be interested in safety as a game, cannot be frightened or wheedled into precaution, he will yield to the appeal, "Look out for the other man; you might hurt him. If you have no wife or child to protect, another man may have!"

The results of this education and organisation in the Steel Corporation have been amazing. Fully sixty per cent. of their accident reduction is charged to it. It is a most complete demonstration that you cannot plan and build safety; you cannot legislate safety; you must work together for it. Perhaps, after all, the greatest contribution which the Steel

Corporation will make to American industry will be the demonstration of the advantages of collective action. Certainly, its safety organisation is the greatest of the many contributions it has made to the safety movement. Many industries are adapting it to their particular cases.

It is doubtful if any one of the new industrial ideas has proved so conclusively that it is good economy to conserve human life, even that life which in our ignorance we have dared to call mean, as this gospel of safety. Accidents have always been a frightful drain on business. In 1912 the railroads paid out over \$30,000,000 on account of personal injuries. In the three years of 1911, 1912, and 1913 the casualty expense of the Steel Corporation was nearly seven and three-quarters millions of dollars. This is an enormous sum, but if the conditions which prevailed in the industry in 1906 had continued, that is, if the Steel Corporation had not been spending around three-quarters of a million a year for safety work, the casualty expense would have been more than twelve and a quarter millions. What it amounts to is that in three years they made a total net saving, through safety work, of \$2,697,115.19.

The reduction in the number of accidents has everywhere been spectacular. The superintendent of the Harvester Company says that, comparing the year 1913 with 1911 and 1912, the number of accidents in their group of plants in Illinois showed a reduction of about 16 per cent. In the waggon plant

there was a reduction of over 30 per cent. and in the twine plant of about 21 per cent. This reduction was in spite of the fact that there was a large increase in the number of employés in this period. New employés are always an increased hazard. The Fairbanks Manufacturing Company of Beloit, Wisconsin, claims that in 1912 the time lost through accidents was 76 per cent. less than in 1907 — a saving attributed solely to their safety campaign.

Mr. John W. Maple, of the Pfister & Vogel Leather Company, reported to the Wisconsin Industrial Commission that in 1912, when their present system of accident preventions was in full sway, they reduced machinery accidents 50 per cent., compared with 1908 and 1909, when the shops were running under about the same conditions, but without the present precautions.

The showing of the railroads in the short time since they began to follow the example set them by Mr. Ralph Richards on the Northwestern has been amazing. In 1912 the Delaware and Lackawanna, the first of the Eastern roads to organise its force and to publish bulletins, reduced the number killed, as compared with 1911, by 35 per cent., the number injured by 25 per cent., the number of amputations by 50 per cent., and this notwithstanding the traffic in 1913 was heavier than ever before in the history of the road. One could go on with scores of such examples.¹

¹ At the congress held in October, 1914, in Chicago, by the National Council for Industrial Safety, there was a bulletin among

This reduction of suffering has an excellent effect on the labouring body. It naturally increases the efficiency and contentment of the shop. The men in the ranks recognise that they have a big part in producing results, and they become proud of the work. It is a wonderful lesson in the value of co-operative effort, both for employer and employés. Moreover, it shows how efforts may be made co-operative, something which both labour and capital have poorly understood.

the exhibits giving the percentages of reduction through efficient safety work in the following group of manufacturing and transportation concerns. They show more effectively than much writing the suffering that has been taken from the world by this movement:

INDUSTRIES: Bucyrus Company, 46 per cent.; Cadillac Motor Company, 22 per cent.; Commonwealth Edison Company, 40 per cent.; Eastman Kodak Company, 73 per cent.; Fairbanks Morse Company, 72 per cent.; Harrison Bros. & Company, Inc., 68 per cent.; Illinois Steel Company, 70 per cent.; Inland Steel Company, 55 per cent.; International Harvester Company (Wisconsin Steel Company plant), 68 per cent.; Jones & Laughlin Steel Company, 71 per cent.; A. J. Lindemann & Hoverson Company, 62 per cent.; Milwaukee Coke & Gas Company, 28 per cent.; Packard Motor Car Company, 67 per cent.; Pullman Company, 70 per cent.; Raritan Copper Works, 22 per cent.; Rochester Railway & Light Company, 45 per cent.; Swift & Company, 48 per cent.; U. S. Steel Corporation, 11,074 men saved from serious injury or death since 1908.

TRANSPORTATION: Atchison, Topeka & Santa Fe Railway, 36 per cent.; Chicago, Burlington & Quincy R. R. Company, 31 per cent.; Chicago & Northwestern Railway, 25 per cent.; Chicago, St. Paul, Minneapolis & Omaha Railway, 34 per cent.; Chicago Surface Lines (reduction in accidents to school children), 75 per cent.; Delaware, Lackawanna & Western Railway, 38 per cent.; El Paso & Southwestern System, 42 per cent.; New York Central Lines, 30 per cent.; Northern Pacific Railway, 35 per cent.; Oregon Short Lines, 39 per cent.; Pennsylvania Railroad, 30 per cent.; St. Louis & San Francisco Railroad, 38 per cent.; Southern Pacific Railway, 52 per cent.; Missouri Pacific, 45 per cent.

There is no point of the safety work which makes a deeper impression on the labourer and does more to prevent suffering than the provisions which are made generally now to give first aid to the injured. They run from a simple first-aid-to-the-injured kit to a fully equipped hospital with nurses and doctors always in attendance. Under the new order wounds, if mere scratches, are immediately dressed; and for those seriously hurt there is from the instant the most scientific care.

The effect of all this equipment is excellent; somebody cares. Under the old system nobody cared, or so it seemed.

But will the safety movement prove more than a flash in the pan — one of those quick enthusiasms which seize a body, and then quickly subside under the strain and stress of the daily burdens? There are the best of reasons for believing it is a permanent thing. In the first place, the most essential side of safety is education, and as a whole the practical men in the movement are trying to extend the education beyond the shops and factories; to commit the world at large to the ideas. Possibly the most effective thing they are attempting is to interest boys and girls. In many steel towns this is done by holding occasional safety meetings where moving pictures are shown, illustrating how accidents happen and how they may be avoided. The Delaware and Lackawanna, seizing on the idea, is offering premiums to railroad boys and girls for the best safety poem. Some of the results have appeared in the

lively bulletin of the road. They may not be very strong as verse, but you cannot read the effort of a boy who has lost his leg by an accident, or a girl who has lost a father, without a gulp in the throat.

The New York Central Railroad has been particularly energetic in its education of the public. It keeps constantly on the road a moving picture car; not only the men and their families are invited to the exhibitions, but frequently the public. Marcus A. Dow, the head of the Safety Bureau, has worked out two or three typical movie melodramas, showing how accidents happen, and the misery that they cause. This railroad is also carrying on an admirable campaign against trespassing. When we blame the railroad for the number of people that it kills and injures, we do not usually take into consideration that anybody but the railroad is to blame, yet the Interstate Commerce Commission in 1912 declared more than 5,000 persons are killed in this country each year while trespassing on railroad tracks. The Safety Department of the New York Central is specialising on this abuse. During 1914, as compared with the year 1913, they decreased the deaths of trespassers by 19 per cent. They are working for laws against trespassers. It is a curious fact that there are 35 States in the Union which do not prohibit persons walking on railroads and rights of way. In various other ways they are trying to put an end to carelessness in the place where it most frequently exists, that is the general public.

What the "safety boosters," as they call them-

selves, aim at is the safety habit, both within and without industry. If they can train us to it — we who write articles on their carelessness and pass laws to restrain them, while we kill ourselves and others by reckless handling of automobiles and reckless insistence on speed and luxuries, they will have rendered the world a great service.

One of the strongest guarantees that safety has come to stay lies in the fact that employers are binding themselves voluntarily, or are being forced to bind themselves, by laws to full liability for all injuries.

According to the *American Labour Legislation Review* there are workmen's compensation laws in 33 States and territories, that is, the *Review* says:

It is simpler now to enumerate the States which are still without such legislation. They are Alabama, Arkansas, Delaware, Florida, Georgia, Idaho, Kentucky, Mississippi, Missouri, New Mexico, North Carolina, North Dakota, South Carolina, South Dakota, Tennessee, Utah and Virginia. Nearly all of these are Southern States and only one of them, Missouri, is a State having one of the great centres of population.

The laws vary naturally with the kinds of industries to which they apply. They vary in generosity and in compelling force; but that they will all eventually come up to the most highly developed form is certain. In many cases they will come thereby not only the consent, but the influence and advice of employers.

But devices and organisations forced by law on a man arouse no great enthusiasm in him; you won't find his eyes glowing or his tongue eloquent over the fact that he is forced to prevent accidents in order to save expense. That is not the way men are made. But in this safety work we do find enthusiasm, the most genuine, the most sustained. It comes from the realisation that at least half of the terrible scenes which have become a commonplace to them, the suffering which they have steeled themselves to see without emotion, is preventable, that the other half can be in many cases softened and mitigated.

"I cannot tell you what it means to me to see this place made safe," the expert in a big manufacturing concern told me once. "I have seen scores of legs and arms cut off in my time, and once a man cut in two by a saw. I had hardened myself to the necessity of it; but to have it put up to me to stop it, to have safety a first consideration, that is one of the greatest experiences of my life."

Converted superintendents and manufacturers make wonderful advocates. They can tell you of what they have seen, what they are saving men from. Perhaps as substantial evidence as we have had of the whole-heartedness which they often put into safety and related work comes from Wisconsin, where, so Commissioner Beck writes, a band of thirty manufacturers recently went out boosting safety and sanitation. What a contrast to a day when the manufacturer went about decrying as "interference with personal liberty" every effort, pri-

vate or public, at industrial safety and sanitation!

Any one familiar with old conditions and the new understands what experts mean when they tell you that safety meetings are frequently like prayer meetings. My own first glimpse of the work taught me that. I was making a casual visit to the National Tube Works at McKeesport, Pennsylvania. I had gone to the plant with a vivid picture in my mind of the plants in and around Pittsburgh and Youngstown in other days — dark, disorderly, crowded places where one dodged danger at every step, and where even ordinary precautions were scouted by men and bosses as "nonsense."

I had some terrible memories to take with me, for I had been close at hand once when a smelting furnace burst and the flood of molten iron had caught a dozen labourers at work on the pig-bed. I had seen the victims of an overturned ladle carried to their homes. All my old impressions were destroyed at a glance, for I was confronted with an order in yard and plant that I had supposed impossible in steel- and iron-making. There was all the cleanliness compatible with anything in the vicinity of Pittsburgh, and as for safety — it was an armoured shop as far as gears and wheels and screws were concerned. I saw what was done for the fellow who was injured — the hospital in the yard with nurse and doctor. I heard of the voluntary compensation scheme which was in operation, and as I saw these things I compared them with my

old impressions. Well! It was like a prayer meeting.

But there is another side to this safety movement which may, after all, be the best guarantee of its permanency. It is what it has done for the employer: it has given him a new notion of his own work. It lifts it from the realm of mere profit and production and places it among the great undertakings which serve men. He sees himself as something more than a maker of things. He is a saver of life and suffering. His industry has become an important link in the chain of human institutions which minister to men. It is consciousness of this which adds to the tremendous enthusiasm for safety, and makes of it a Gospel.

CHAPTER IV

HEALTH FOR EVERYMAN

Very like the safety movement in genesis, methods and enthusiasm is the less developed industrial health movement. Its slogan is Health for Everyman. Like the safety movement it wars on evils which the average employer has long contended were none of his business, but which having finally accepted, he is attacking with hard common sense and professional thoroughness.

Two classes of disease trouble industry. The first are those incident to the occupation, trade diseases.

There is no class, trade, profession or activity of men and women which does not have a possible physical evil accompanying it. A book has been written on the " Disorders of People of Fashion "; one might equally well be written on the " Disorders of Bankers and Brokers." Writers have their cramp and artists their colic. If classes with the means to control their conditions and to secure the best advice on avoiding the evils incident to their work still are so afflicted that they are the support of hundreds of Cures as well as of tens of thousands of physicians and nurses, masseurs and pharmacists, what can we expect of the millions in industries

where they have no control over surroundings and no instruction as to the dangers of their occupations. These diseases which have made frightful havoc with national health come from dozens of different causes. They are the results of poisonous metals and gases, of inflaming dusts and germs, of air pressure and of strain. The potter is in danger of lead poisoning, the match-maker of "phossy jaw"; textile-workers fear tuberculosis, washer-women eczema. The stonemasons, sugar-refiners, candy-makers all have skin diseases peculiar to their trades. Gardeners are in danger of poisoning from the seventy or more irritant plants they handle. Anthrax threatens those who work with animals or animal products,—whether they be sorters, butchers, shepherds or cattle salesmen. There is a big range of tremors and palsies, of spasms and neuroses traceable to shop and factory conditions. Eye strains from improper lighting and from too fixed and too continuous attention as well as injuries from dust and gases are very general in many occupations. Our growing knowledge of the causes of many ailments which we have accepted as inevitable and the realisation of the enormous influence these things have on unhappiness and on inefficiency have been a sharp spur to the efforts of all those who are interested in industry in any way. The intelligent employer is coming to a point in regard to occupational disease very like that he has towards safety. "Show me the disease and I will find a way to prevent its ravages." But just as safety is one-third

prevention and two-thirds education and organisation, so in occupational diseases education and organisation are the biggest factors.

Take the matter of lead poisoning of which we hear so much. After every mechanical precaution has been taken — the care of the operative still is the most important factor. His education and strict supervision are essential, and this is now being undertaken in many different industries.

The American Museum of Safety is recommending in its excellent bulletin "Safety" the following set of rules adopted over two years ago by the Edison Illuminating Company. It is a little fuller but no better than several other sets of rules which I have examined:

1. Do not work on an empty stomach; this is especially important, as the stomach when empty readily absorbs lead.

2. Do not put the fingers in the mouth or take food while at work.

3. Keep the finger nails cut short and clean.

4. Do not chew tobacco while at work. In handling tobacco, the lead oxides are carried from the hands to the mouth. Chewing tobacco does not prevent the user from swallowing the lead, as often believed.

5. When leaving work and before eating, wash the face, hands and arms with soap, and thoroughly cleanse the mouth, nose and finger nails.

6. Do not eat lunch in the same room in which there is lead dust.

7. Drink plenty of good milk; it is a valuable preventive of lead poisoning.

8. Whenever in the least constipated, take a dose of Epsom salts. It will do no harm to do this regularly. It is exceedingly important that the bowels be kept in good condition.
9. Take a bath frequently; cleanliness is the best prevention of lead poisoning.
10. Working clothes should be left at the place of work.
11. It is better not to wear a moustache or beard, as they collect dust. If worn, they should be cut short and kept clean. A cap should be worn to cover the hair.
12. When sweeping, always dampen the floor to prevent raising dust.
13. When working where there is lead dust, wear a respirator. A good respirator can be made of several thicknesses of gauze or cheese cloth and should be washed every day.
14. Do not drink alcoholic liquors while at work, or better, avoid their use entirely. Whiskey does not cut the lead in the system, as some believe. Alcohol always weakens the system and makes it more susceptible to lead poisoning.
15. In work where lead comes in contact with the hands, wear gloves as much as possible and wash and dry each day when used.
16. The wearing of goggles will prevent the splashing of wet sediment or acid in the eyes when repairing cells.
17. When melting lead with a hydrogen flame, as when burning plates to bus bars or repairing tank linings, the fumes given off may be blown away from the man operating the flame by a suitably directed stream of air. (The air supply for the flame may be tapped for this purpose.)

It is obvious that such rules call for a genuine co-operation from the employer who adopts them.

A workman cannot keep clean without plentiful supplies of hot and cold water, of soap and towels as well as of basins. If the lunch is to be eaten outside of the work room there must be a lunch room. If work clothes are to be left at the factory there must be lockers. If gloves and goggles and respirators and milk are required there must be provisions for them. The employer who is intelligent enough to set these rules will be intelligent enough to make it possible for the workman to obey them.

It is not always easy to secure co-operation from the labour force even when the best equipment has been provided and the most careful instruction given. The difficulties of persuading men and women to wear respirators where there is irritating or toxic dust is even greater than that of persuading those who use emery wheels to wear goggles or those who run saws to keep on the guards. An eye out, a finger off is the terrible lesson which enforces the use of goggles and guards but dust gives no such spectacular demonstration. Its victims grow pale and drop out. Their companions accept death as one of the mysteries of life inevitable and unescapable, or as the "will of God." To teach them the connection between the death and the dust is a slow process but it is the obvious duty of those who employ them.

The attempt to control occupational disease begins in the employment bureau of the modern factory by a thorough physical examination. Indeed in hiring now-a-days it is a man's body which receives

the first attention. "We are not hunting perfect physical specimens," Dr. Farnum the medical supervisor of the Avery Company of Peoria, Illinois, says. "What we are trying to do is to ascertain whether the individual man's physical condition is compatible with the work he is going to do." Is the man in condition to resist the peculiar danger in the occupation? A physical examination ought to show this. Is the man strong enough to do the work? That is a matter not difficult to decide and its decision prevents many a poor fellow straining himself to injury in too heavy tasks.

The modern employment bureaus know enough not to send a girl whose eyes are poor to a machine where the operation requires the strongest and steadiest sight. It does not put a man with a wooden leg to working a treadle which requires the leg muscles of a first baseman. It sends the girl to an oculist and often tells her to apply again when her trouble is corrected and not infrequently it finds something the man with a wooden leg can do.

While the preliminary examination prevents men from taking work where all the physical odds are against them it often for the time demonstrates to a man a handicap which he has never suspected. If it does not give him the work he wants it gives him valuable knowledge about his body which he probably would not have had until too late. He is obliged to face his handicap. The weak point is that he probably does not know how to seek a cure or if he does he has not the means. It can hardly

be expected of employers that they take care of applicants, though there are cases where it is done. The obligations here would seem to rest on outside social agencies:

There is no question but that the best interests of the labour force is served by a refusal to accept those who are unfit for a particular task. The relation of the health of the whole to that of the work is obvious. There is a close connection too between disease and accidents.

"We think it would be reprehensible," the management of the Commonwealth Steel Company says, "if we did not know that a man had only one eye and would therefore put him where he might be in danger of having his good eye knocked out. We should for his own good and that of his fellow workmen know he is not subject to 'fits' or conditions that might let him fall into things or off of places. We feel we should know that men who operate our twenty big overhead cranes are in physical and mental condition to properly handle big loads over other men's heads, etc., etc., etc. We feel, too, that we have the right and that we owe it to their fellow workmen to reject men who have certain objectional diseases."

The man who is accepted as a good risk in a modern scientific shop — will find there, as has already been said, all mechanical precautions that are known to minimise the trade danger. He will find the most important of all safeguards whatever the disease — good air — regular temperature, and

proper sanitation. If in addition he receives an education in the precautions he ought to take, he will have as fair a chance to escape the menace of his trade as industry knows how to give.

The most important feature of his education will be the annual physical examination which is offered all employés in a thoroughly modern organisation. Some idea of what is covered may be obtained by a look at the card here printed used by Dr. A. M. Harvey of the Crane Company of Chicago. Dr. Harvey is one of the pioneers in factory health work. His system is thorough and his supervision constant and intelligent.

In all factories where the physical examination is put into force a few old employés are almost invariably found to be suffering from serious troubles which neglected would soon incapacitate them. These troubles may be, too, of such a nature that the men are a menace to their fellows. There is an impression abroad that such discoveries lead to immediate discharge; that is, that the annual physical examination is really an annual weeding-out process — intended simply to keep a vigorous force together. Undoubtedly the aim is a vigorous force. It should be, but I have never personally found an employer dismissing a diseased workman without giving him a chance for a cure or a change. Again and again I have known of cases where a serious condition, quite unsuspected by the victim has been discovered and by promptly dealing with it the health has been entirely restored.

PHYSICAL EXAMINATION OF APPLICANT
FOR WORK

FILE NUMBER

Name Check No.

Address Street Flat.....Front or Rear

Date of Birth Weight.....Height....Ft... In.

General Appearance, development and condition of nutrition.....
.....
.....

Chest Measurements; Forced inspiration In.
Forced expiration.....In. Girth In.

Is there any peculiarity in the shape, capacity or movements of
chest?

.....

Lungs; Respiration per minute Percussion

Auscultation

Heart; Pulse rate Character of pulse.....

Auscultation

Inspection of; Mouth Throat

Missing Teeth { Upper 8 7 6 5 4 3 2 1 | 1 2 3 4 5 6 7 8 }
{ Lower 8 7 6 5 4 3 2 1 | 1 2 3 4 5 6 7 8 }
/20

Vision (by Snelling Chart) — Right Eye

/20

Left Eye

Hearing; (Note if able to hear ordinary conversation

Note { Eyes and eyelids Spine and Joints

any { Head, face and neck Groin

gross { Hands and Arms Skin

defects; { Feet and legs Blood Vessels

Urine { Specific gravity Albumen

Reaction Sugar

Remarks;

.....
.....

Date and place of examination M.D.

The Pfister and Vogel Leather Company of Milwaukee, which has been conducting annual physical examinations for some three years says they have been obliged to discharge very few men who were in their employ before the installation of the system.

The physician is never allowed in this company to lay off a man who has been long on the rolls on account of physical defects. He must make his report to the superintendent. When they find a man can not be restored to health, they keep him at work through the winter months or until such a time as he is able to secure other employment, giving him a notice of some two months so that he can make his arrangements. Frequently they have been able to remedy a condition by an operation. In the first two years after starting their medical work, they operated on eighty-four men, all of whom are now in the factory at their old wages. They insist, as do all the best companies where I have examined the medical department, that what they are after is sound bodies, and that they consider it part of their business to help the men to a good physical condition and show them how to keep so. The Crane Company support a sanatorium for their "run-down" or convalescing employés. At a beautiful and historic spot on the Illinios River eighty miles from Chicago, Buffalo Rock, an institution has been fitted up for the care and treatment of those who need it. They believe it one of their wisest ventures.

Particular care and kindness is exercised where

tuberculosis is discovered. All over the country employers are sending tubercular employés to tent colonies or hospitals where they can have the best of care. Often the victim has had no idea of his condition and fights an exile. A man who has been thirty years with the Avery Company of Peoria, Illinois, was found on the first examination they held to have tuberculosis of the lungs. He was immediately sent to the Ottance Tent Colony and is now back at work.

The Metropolitan Life Insurance Company has made especially elaborate arrangements for caring for those among its 15,000 employés who are tubercular. The sanatorium — built on the southern slope of Mount McGregor, New York, a stone throw from the cottage where General Grant died — is one of the noblest of the company's many contributions to the cause of national health. It has aimed to make a modern sanatorium, one which should not only serve its employés but should set the highest standards for such an institution and which should as time went on serve as a great laboratory for developing better methods for fighting the plague. There has been a question raised as to the legal right of the company to devote money to such a purpose. It is a question often raised over this kind of work by corporations and stock companies. Before undertaking the work a judgment was asked from the Appellate Division of the Supreme Court of New York. The court returned as a principle the following:

The duties of the employer to the employé have been enlarged in recent years, and are not merely that of the purchaser of the employé's time and service for money. The enlightened spirit of the age, based upon the experience of the past, has thrown upon the employer other duties, which involve a proper regard for the comfort, health, safety and well-being of the employé. . . . It is well within the corporate power to assume, as it has done, the care and treatment of such of its employés as are afflicted with tuberculosis. And unless it is shown to be wasteful of the company's money and unproductive of beneficial results, the practice may stand as well within the scope of its business. The reasonable care of its employés, according to the enlightened sentiment of the age and community, is a duty resting upon it, and the proper discharge of that duty is merely transacting the business of the corporation.

I doubt if more care and truer sympathy have ever gone into an undertaking than into this sanatorium — and it is the more impressive because the company insists that they regard it simply as sound business. It is another evidence of the spread of the discovery that the highest humanity is the soundest business. One achievement at Mount McGregor has been making the patients happy. I never saw a group of afflicted people so full of surprised contentment and hopefulness as the girls I talked with there. They were not all to recover. Some were too far gone when they were received but they knew they were having the best chance science and devotion could give. They looked out from their chairs on a

beautiful world and however hard it had been in the past they had found at last its kindness.

One of the results of the three years operation which the company values most is the fact that no man or woman who is now sent to Mount McGregor fears the sentence. Those who have come back restored bring a story of such happiness that he goes gladly and hopefully.

It is a satisfaction to have one's unofficial impressions of a practice as promising as this of physical examinations of employés confirmed by an official investigation. One has been made by the versatile, enlightened and energetic Industrial Commission of the State of Ohio. According to its findings, there were only four establishments in the State conducting these examinations before 1914; that is, four outside of the railroad companies and street railways, where, as it is well known, physical examinations and tests have been in practice for a good many years, in the interest of the public, however, rather than in the interest of the man. The insurance companies of course have always carried on such examinations, but this was not, as the commission points out, to assist an unfit person becoming fit, but to safeguard the insuring concern.

The commission found that at the time of this investigation, (the report was published in the fall of 1915), there were some forty-two (42) establishments in Ohio examining applicants for employment. Full reports of the results of the examina-

tion were not to be had, but in the case of 23,118 applicants of which reports existed, it was found 1040 had been rejected. The reasons for these rejections are interesting. At the head of the list stands impaired vision; hernia comes next; then organic diseases of the heart; tuberculosis and the social diseases did not prove to be nearly as general as popularly supposed.

Possibly the most interesting observation of the investigators was that these rejections for disease or poor physical condition were not final in several of the establishments. Men or women found unfit were frequently referred to a physician. In some cases a course of treatment was prescribed or an operation recommended. It was found that often if the applicant came back in good shape he was employed.

The report states that it found the following reasons given by employers for the examinations. They tally very well with my own observations:

To enable the employer to select a force physically fit for the work.

To determine the physical condition of workmen upon entering employment so that unjust claims for injuries may be avoided.

To adjust the employé to the work for which he is physically best suited.

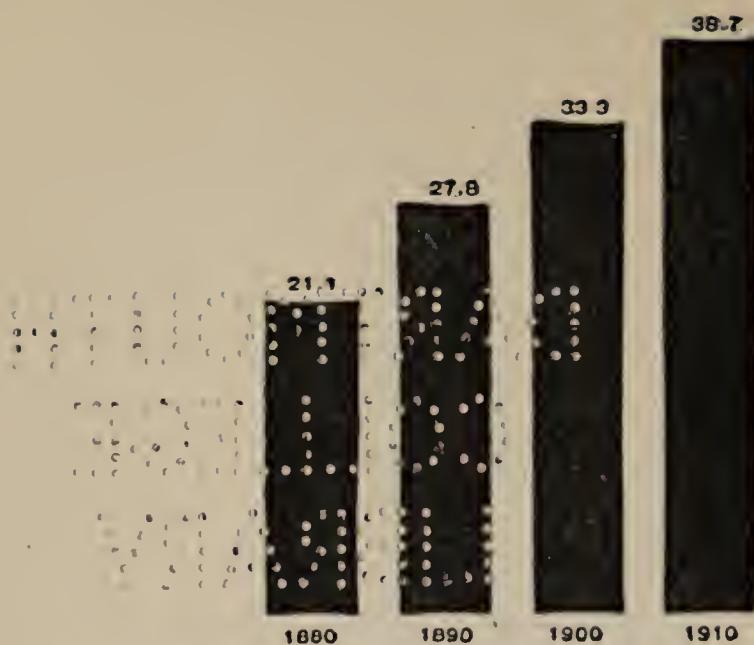
To maintain the health of employés by preventing the introduction of communicable diseases, by detecting physical diseases and defects in their incipiency, by advising and educating the industrial workers to care for their physical well-

being, and to reduce the hazard to the individual employé and his fellow employés arising from physical defects.

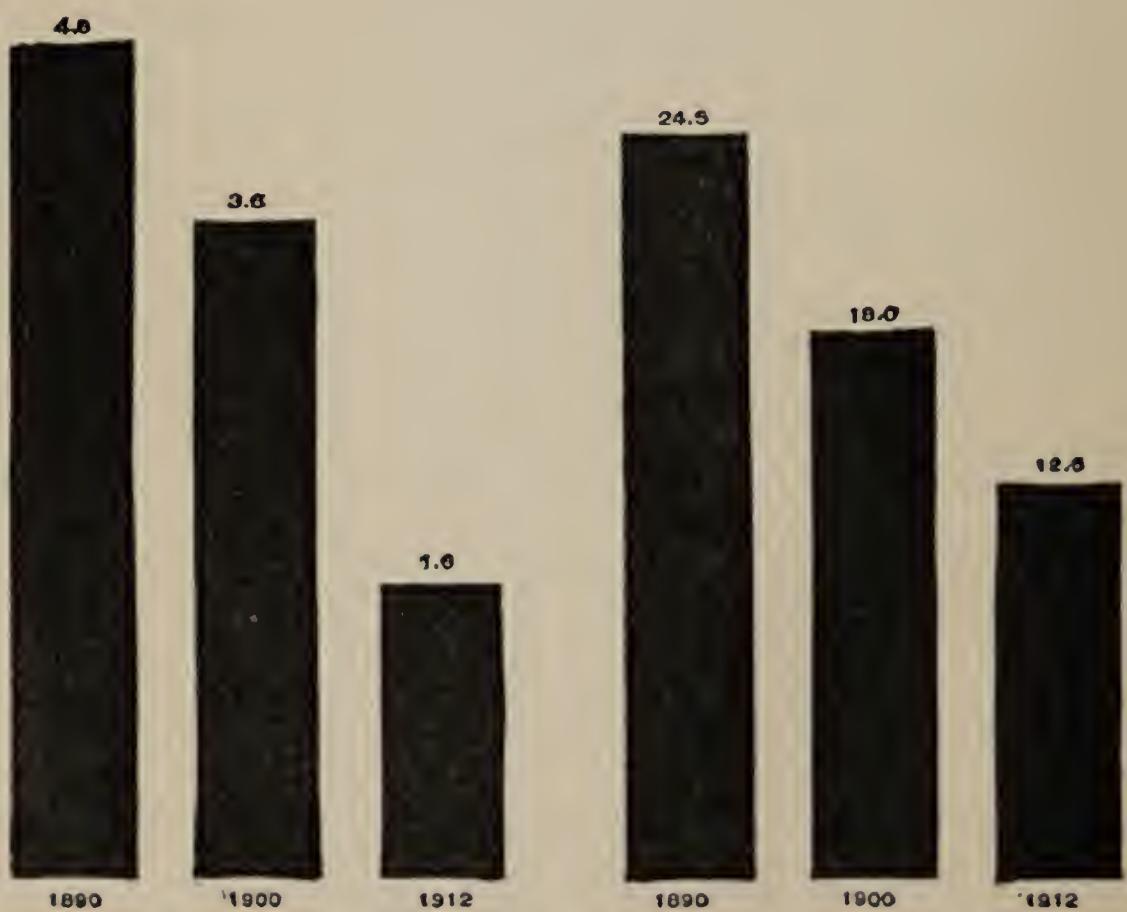
The point of danger which the Ohio Commission finds in the physical examination is that without proper supervision many establishments may put too high a standard on the physical fitness of applicants, eliminating would-be workers unfairly. It suggests that the State exercise a supervision over the examinations. The chief bar to this abuse in normal times is that there is a greater demand in well established industries than there is supply.

It is not the occupational disease nor is it tuberculosis or typhoid or troubles calling for operations, which are the most serious problems in industrial life. It is the minor degenerative diseases — the impaired digestion, the thin blood, the poorly functioning kidney, the nervous run-down condition — ills which the victim does not realise but which if not checked will sap his strength, weaken his resistance to occupational disease and to epidemics and often hurry on some tendency of which he knows nothing. How widespread impaired condition is has been brought out graphically by the recent investigation of our great life insurance companies and that unique and promising young organisation the Life Extension Institute.

Below is a diagram presented before the American Society for the Development of Science by Dr. Louis I. Dublin. It shows that degenerate diseases have increased from something like 21 per cent. in



INCREASE OF DEGENERATIVE DISEASE IN UNITED STATES IN
30 YEARS.



DECREASE OF TYPHOID FEVER
IN 22 YEARS.

DECREASE OF TUBERCULOSIS OF
LUNGS IN 22 YEARS.

1880 to over 38 per cent. in 1910. At the same time it shows that in twenty-two years we have reduced typhoid fever from 4.6 per cent. to 1.6 per cent., and tuberculosis from 24.5 per cent. to 12.5 per cent.

In its investigation of industrial and commercial workers the Life Extension Institute has found only .46 of the former and .81 per cent. of the latter really sound. It declares that nearly 97 per cent. of those examined need advice about how to live. Nearly this full number were not aware that they were in any way impaired, and yet such was the impairment that over 67 per cent. of the former and nearly 72 per cent. of the latter needed treatment of some kind. There were many ailments which the Institution classified as "minor to moderate," but the character of them was such that they must inevitably become worse.

The institution found numbers of those examined afflicted with some kind of physical defect which could be corrected often without the help of a physician, but neglected because unrealised.

It is these degenerative diseases which are mainly responsible for the huge sick list in American industry. In 1915 the Metropolitan Life Insurance Company, co-operated with the Federal Bureau of Labour in a study of unemployment. A million wage earners were covered. It was found that 1.2 per cent. of these people were unemployed because of illness.

In Rochester, New York, a special investigation

was made by the Metropolitan in September, 1915. It covered 14 per cent. of the population. On the basis of this survey about $2\frac{1}{2}$ per cent. of the working people of the town are continually unemployed because of illness.

Dr. Frankel and Dr. Dublin, who made this report, and who certainly are as well qualified to speak as any one in the country, estimate that the working men of Rochester lose something over one and a quarter million dollars in money a year through illness.

Apply the percentage of sickness found in the first investigation referred to above, 1.2 per cent., to the working world of the United States as numbered by the census of 1910. In all occupations there were then engaged 38,167,336 persons, 8,075,772 of them being women. If 1.2 per cent. of these are continuously ill we have an annual loss of 137,402,400 days (counting 300 days to a year). Suppose the average wage of the working world is but \$1.50 and we have a money loss of over two hundred million dollars — and a loss falling in the main upon those least able to bear it. But this money loss is small beside the loss which comes from discouragement, from debt and from the general disorganisation that illness causes, particularly in families who depend upon a daily wage for support.

The chief cause of all this misery is neglect of personal hygiene and the chief reason of the neglect is ignorance. The annual physical examination is

DATE OF BIRTH 3 Mar. 1884 EMPLOYED 4 Jan. 1903 NAME Doe, Jane.

DEvised by THE JOSEPH & FEISS CO., CLEVELAND, OHIO

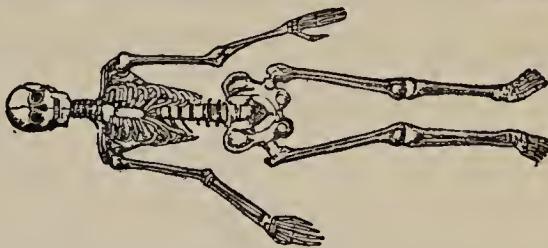
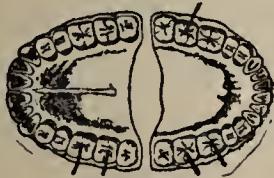
FAMILY HISTORY Father died of cancer of stomach, 1899.
Turn sister epileptic.

HOME CONDITIONS Lives with mother, turn sister, 10 yr old sister, and 17 yr old brother. Shares
badly ventilated bedroom with 2 sisters. Home neat and thrifty.
5 rooms + bath, garden.

INCOME CONDITIONS Mother owns home. Jane and brother (earns \$8.00 wk) support family

SAVINGS Yes.

Cpt 8.1914



DATE	COMPLAINT	TREATMENT	REMARKS	BY
4-5-14	Examination	No organic trouble. Genl health good, but must have more sleep and avoid tea and coffee. See oculist about headaches. Tonsils enlarged.		
4-11-14	Headaches	OB $\frac{5}{9}$ c fl $\frac{5}{5}$, Fundus normal, OB $\frac{5}{5}$	m.	
4-19-14	Sore throats	Has glasses from optician 1 $\frac{1}{2}$ years. Homatropin necessary. Cathartic, gargle	s m	
4-20-14		Homatropin administered Shadow OP. gl 150 OB - 125 = cyl 025 + 180 Sulz OP -- 150 OB 1 - + 125 - cyl 025 + 180 $\frac{1}{2}$ %	m.	
4-25-14		Glasses satisfactory		
6-20-14		Dental work partly completed		
7-1-14	Sore throat	Cathartic, gargle		
8-2-14	Anemic,	Blands pills		
9-30-14		Dental work finished		
1-8-15	Sore throat	Cathartic, gargle		
1-8-15	Absent 8 days			
1-20-15	Enlarged tonsils	Operation by M. at German hospital		
3-1-15	Interview	Health greatly improved	Consent to operation Successful	
			To go to summer camp, close watch over sleep & air.	
				K. W. m. m. K. m. K. K.

A TYPICAL RECORD FROM HEALTH FILES OF THE CLOTHCRAFT SHOP OF CLEVELAND, OHIO.

the best possible method of discovering and dispelling the ignorance.

The blank record from the Crane Company published on page 85, gives an idea of the ground that physical examinations usually cover. The record on page 95 from the files of the Clothcraft Shop of Cleveland shows how practically a good medical department follows up an examination. The card not only presents the state of things in the case of Jane Doe when she was first examined, but it shows what has been done for her. We see that she had at the start no organic disease, but that her tonsils were enlarged and five teeth needed attention. She suffered from headaches and sore throat, and the card shows that the cause of each was sought. In one case she had not been getting enough sleep. At another time it was anæmia that was behind her ailments and she was given a tonic and the nurse was directed to follow her up constantly about fresh air and the need of more sleep. She was persuaded to have an operation for her tonsils, which is reported successful. This seems to be doing a good deal for Jane, but it is only the beginning. So long as she is with the Clothcraft Shop, every time she complains, every time her work begins to fall off in quantity or quality, every time she doesn't appear at her machine, the reason will be sought and the remedy applied.

In this particular shop, the Medical Department is maintained as an arm of the Employment and

Service Department. There is a graduate nurse in charge of the work, there is a dispensary, waiting room and rest-room, and a consultation room for the factory physicians. And there is a Medical staff, consisting of a physician, an oculist and a dentist. All of this is paid for by the company. Outside service from the factory physician is furnished to employés and their families at special rate.

There is no phase of the Clothcraft management from which it is believed a more direct return in dollars and cents comes than from this medical service.

It will be noticed in the above record that Jane consented in August of 1914 when it was found that she was anæmic to "go to summer camp." The Clothcraft shop is one of many in the country where the value of the annual vacation in keeping up efficiency has been amply demonstrated. Employers have come to the practice slowly. Men and women who work with their hands have never been generally considered fit subjects for leisure. Too often their only vacation is forced upon them by unemployment. Instead of being a time of pleasure, it is one of deprivation and anxiety. This is one of the inequalities of the working world which distressed good Sam Jones of Toledo — "Golden Rule" Jones — most sorely.

"It really seems a long way ahead," he wrote despondently once, "to the time when carpenters, blacksmiths, sewer-diggers, street-pavers, brick-layers, plasterers, streetcar men, drivers, railway men of all sorts, from the trackmen down to the superin-

tendent, lumbermen, stone-men, farmers, kitchen-girls, laundry-workers, factory girls, shop-girls, clerks, and indeed all sorts of workers will have work and due wages with a vacation or rest time as certain for all as it now is for the teachers, the preachers and the majority of the professional classes.

"I am inclined to the opinion that to-day vacations, trips to Europe and the mountains and the sea-shore are more generally the privileges of those who do not work at all, than of the workers of any sort."

Sam Jones never neglected an opportunity to hit at the social injustices in his own little world. In 1899 he inaugurated in the Acme Sucker Rod Company an annual week's vacation on full pay for all those who had been six months with the concern. His political enemies sneered at his vacations. A hostile newspaper declared that there were few large concerns in the country that did not give employés a week's vacation with pay. The editor would have been hard put to it to name a dozen where the men outside of the office received even a day with pay. Vacations come in many large concerns in the natural order of business. They are an incident of the annual shut-down for repairs and painting but the men as a rule pay for them. Sam Jones was ahead of his world in this practice as well as in some others. He might have retaliated with incidents of men dropped entirely because they merely asked for vacations! There are still too many old-fashioned

employers who don't want a man around who thinks that a week or two off in the summer is a good thing!

One of the most successful and sound developments in the vacation idea of which I know is that in the Pilgrim Steam Laundry of Brooklyn, New York. It was fifteen years ago that the first experiment in vacations was made by the firm. At that time, even more than to-day, people were insistent upon having their soiled linen collected on Monday and delivered not later than Saturday noon, which gave a very short week. Fewer people left their city homes for the summer months too, making the work heavier in proportion in the summer. The giving of vacations, at the proper vacation periods, was consequently a very difficult matter.

However, the feeling that it would be impossible to build up a stable and permanent organisation without such a period for rest, relaxation and pleasure, caused the management to attempt a vacation programme. For three years the plan was to collect the names of those who wished to take a week off at their own expense, and to supply help for those weeks.

Twelve years ago the plan developed a little farther and one week's vacation was allowed with pay to those who had been in the employ of the company for two years or more. Those who had been in the plant for one year and less than two were still allowed one week's leave of absence without pay in every case where arrangements could be made.

From these beginnings the vacation programme

was gradually extended as the growth and development of the business justified it, until at its present proportion: —

Superintendents receive four weeks' vacation with four weeks' pay.

Heads of departments receive two weeks' vacation with two weeks' pay.

Employés of one year receive one week vacation with one week's pay.

Employés of from two or five years have their choice of one week's vacation with $1\frac{1}{2}$ weeks' pay, or two weeks' vacation with one week's pay.

Employés of five or more years have their choice of one week's vacation with $1\frac{1}{2}$ week's pay or 2 weeks' vacation with $1\frac{1}{2}$ weeks' pay.

Generous as this programme is the firm is not content. They believe that in the interest of efficiency they should enlarge it and this undoubtedly will be done as the business justifies it.

Let no one think that an employer's work is done when he arranges for vacation for his force. Frequently it is only begun. It is a pathetic fact that to large numbers of people particularly girls and women the idea of a vacation is bewildering rather than exciting. Take girls of foreign parentage, even those born in this country, and it is not an infrequent thing for them to say when a vacation away from home is suggested, "I never heard of such a thing," or "What can I do," "I never have been out of New York," "or Rochester," or whatever it may be, "in my life"; that is the idea of a vacation falls

on the stoniest of ground. There is neither interest nor anticipation awakened. It is a gift of which they do not know the use. They do not want it because they never have learned the meaning of it. An employer who really knows his people and has come to this idea of vacation by the only sound process, that is the recognition that change and recreation are absolutely essential to a stable interest in work, knows that he has on his hands a delicate educational task, one the more complicated because he generally does not know where to advise them to go.

It was a sympathetic sense of the difficulty great numbers of girls in New York City must have in placing themselves for their summer holiday and a fear that this difficulty might retard the growth of the vacation idea that four years ago led the women in the Metropolitan section of the National Civic Federation to form a committee to collect and distribute information.

An investigation committee was sent out to look over boarding-houses and summer hotels within a reasonable radius of the town. All information collected was passed on to the girls in shops and factories. But immediately a second need was discovered. Girls who seized the information eagerly and planned to use it often found themselves, when it came to vacation time without enough money to leave town — try saving twenty-five dollars a year on an income of ten dollars a week in New York City and see for yourself if it is easy — and so a

second undertaking grew up: that was a Vacation Savings Bank, an arrangement by which the girls in the shops and factories might deposit any sum from five cents up that they could spare from their weekly pay envelopes. This fund which was started in November, 1911, with forty-three girls has enrolled in four years some 21,000 and had deposits of about \$200,000. Fully half of these depositors have used their savings for vacations.

The co-operation of employés has been essential in carrying out the work. Scores of firms in New York City allow girls in their employ to act as agents for the Vacation Committee in their shops or factories on company time and there is a general consent that the enterprise has worked for health and stability.

The pre-eminent service of the factory medical department is the education it gives in the care of the health. It is not a simple undertaking. In many bodies of labour, especially where it is organised, there is suspicion to be overcome. They have been told that it is in the interest of the counting room rather than in their interest and many of them have yet to understand that the two are inseparable. Nevertheless I have never known of a factory where the work had been undertaken intelligently, that the people were not its staunch defenders. They come, sooner or later, to look upon it as one of their rights and to demand its full service. In one factory where the employés have had the examination for some four years, the only complaint has come to be that

some examiners are not as thorough as others! In this particular case, the examination is voluntary. Perhaps 15 per cent. refused to take it the first year; everybody takes it now, and as I said, insists upon it being thorough.

As for appreciation and co-operation when confidence in the service is established it is hearty and fine. One company tells of a skilled workman who had left their plant for higher wages returning in a few weeks. "My wife and I think," he explained, "that the care and attention I get here is worth more than the difference in wages, so I am back to the old job." Another workman in this factory who had been badly injured and carefully nursed was given his compensation check. "What kind of a fellow do you think I am, anyway?" he said indignantly. "Haven't you been looking after me for over a year when anything was the matter with me? Not me!"

The real difficulty is that common to all health work. Men and women are indifferent to hygiene, to personal habits until too late. "It never bothers me," "I feel all right," is the opposition in the factory medical department as it is everywhere, to attempts to persuade a man with certain diseases that he is in a dangerous condition. The Kodak Company tells of examining an employé with a blood pressure of 250, who when warned, declared he had never felt better in his life. In three months he was dead.

As for arousing employés to the need of fresh

air, of regular meals, of correct posture — it can only be done by patient, line-upon-line training. As fine a campaign of education as I ever saw waged was that of the physician of a Cincinnati shop of some 6,000 men — almost none of whom drank water freely and most of whom suffered the usual results. By exhortation, explanation and entreaty given in public and private he was gradually educating them to drink water freely. Six thousand men converted to the flushing system is a real contribution to national health.

The health bulletins and pamphlets are a practical feature of education in many plants. The Worcester, Massachusetts, Corset Company has for years issued booklets of information and advice suited particularly to the class and the habits of the hundreds of girls it employs. The care of the body, the importance of a healthy digestion, scores of topics are treated in so clear and personal a fashion that in the end they arrest the attention of the most careless. Health has become one of the ambitions of the girls in this factory through the continued efforts of the management.

Often the pay envelope is made the carrier for health teaching. Each week there is printed on its face some bit of advice so put as to interest and stick. The Beech Nut factory at Canajoharie, New York, has been particularly happy in the maxims it devises for its pay envelopes.

TO LIVE WELL AND
DIE WITHOUT FEAR

Breathe deeply.	Bathe frequently.
Eat temperately.	Chew thoroughly.
Drink (water) copiously.	Clean teeth carefully.

HEALTH

Laugh heartily.	Exercise daily.
Work planfully.	Speak kindly.
Serve willingly.	Read much.
Play some.	Think more.
Sleep regularly.	

DARE TO BE YOURSELF —

Cheerful, Conscientious, Brave.

DISEASE IS ALWAYS AT YOUR
DOOR AWAITING AN INVITATION

“CLEAN UP”
YOUR SURROUNDINGS
Special for 1 week, April 26–May 1

It may be YOUR DESK.
It may be IN YOUR HOME.
It may be YOUR BACK YARD.

Whatever it may be
“CLEAN UP”

Invariably such lively phrases are repeated and quoted and more or less heeded.

Good as many of the health bulletins are, none of them that I have seen equal the series prepared by the Life Extension Institute. This original organisation aims to be a self-supporting philanthropy. It fights degenerative diseases and although it is but three years old it has already increased our knowledge of the serious inroads that they are making in the country's health and has aroused thousands of patients to the need of better habits. The Life Extension Institute offers its services to individuals or groups. It gives one of the most thorough physical examinations that I personally have experienced. A full report is then made and followed by a personal interview with a diagnostician. If a difficulty calling for a physician's care or for special treatment or operation is discovered, the patient is so informed. For diseases which are the result of improper living, a proper régime is prescribed. This preliminary work is followed by a series of monthly keep-well leaflets, of the most practical and scientific character. They aim not only to advise but to inform of whatever is new in the care of the health that the Institute deems wise to pass along. The titles of these leaflets show their range and relevancy — "Posture," "The Hygiene of Middle Life," "Underweight," "Overweight" (the real meaning of each and its relation to active life) "Setting-up Exercises," "Hygiene of the Mouth" etc., really stimulating and informing tracts.

A factory which has not established a medical department could do no better than ask in the Life Extension Institute to make a health survey of its employés. Ford's has already done this although they have a large medical organisation. Even if it were desired to install a medical department in order to have doctor and nurse in daily contact with the force which is of course, the ideal arrangement, the standards and methods of the Life Extension Institute are such that it would be possible to start right at the beginning — which is difficult. The factory medical department being a pioneer movement has had to work out its methods as it went along. The Life Extension Institute could put such a department firmly on its feet at the start.

The true aim of the industrial medical department of a factory or shop is to put employés into condition and keep them there: Restoration and Prevention. The most serious abuse, indeed the only serious abuse, of the system which I have ever known was using the department merely for temporary relief. This happens oftenest where large groups of girls are employed. The usefulness of the nurse and the first-aid room are measured not by the *prevention* of headaches, nausea and fainting spells but by the promptness with which an indisposed girl is restored to her task. The means employed is more often than not a stimulant or opiate — something that acts quickly. This is a grave abuse of the system. It not only defeats the object of scientific management which is to bring about a condition of

sustained well-being among the workers but it encourages one of the most pernicious habits of working women — dependence on drugs. Thousands of them take these so-called medicines as regularly as men take drinks. One has only to examine the columns of the newspapers, particularly those in foreign tongues, to see the extent of the appeal. In many of these journals I have found fully half of the advertising space devoted to cure-alls. Only the phonograph disputes with them for attention. The mere look of the pills and nostrums they send is enough to condemn them. If their use is continued they are as certain as liquor to injure the stomach and nerves.

One of the real services of the medical department of a factory should be fighting these remedies just as it should be fighting alcohol. When instead of rendering this service it actually encourages, even teaches their use, as it certainly does when its aim is returning the employé at once to his task, it is a menace instead of a help to health. It is, of course, proof that the employer has not caught the idea behind the factory health movement, that he is still concerned only with the day — not at all with the future.

The returns of all this work to the employer are not speculative. They can be measured in days saved, in product increased; and many factories have made such estimates. Take the work of the Tennessee Coal, Iron and Railroad Company in and around Birmingham.

The Tennessee company employs some 18,000 men, who with their families represent a population of about 50,000. About 53 per cent. of the employés are negroes. Although the mines and plants of the company are distributed over a wide territory, by far the greater number are comprehended within an area having a 15-mile radius from Birmingham.

The industrial betterment work as now organised was started some three years ago by Dr. Lloyd Noland, who had had several years' experience in similar work on the Panama Canal. At the outset it was believed that general sanitation and preventive medical care not only constituted a moral responsibility, but gave results that paid; that is, it was cheaper to prevent disease than to cure it. The soundness of this viewpoint has already been demonstrated. The average earnings of the employés have increased in a higher percentage than their rates of wages. The average number of working days per month has increased from 16 to 22.

This is but one of many similar records.

CHAPTER V.

“ SOBER FIRST ”

Two formidable campaigns against drink are going on in this country: one vociferous and political; the other quiet and industrial. One aims to legislate both the man that makes the drink and the man that sells it out of business. The other concerns itself with the man that does the drinking. It aims to bring him to temperance by any method that will work. The slogan of the first is “ down with the saloon ”; of the second “ sober first.”

This second campaign is in the hands of those men who are attempting to re-organise that portion of the working world which they control so that every man in it will have the chance to develop all there is in him. This effort — which is the very essence of the new scientific spirit in industrial life — is hindered at every point by habits. One of the deepest rooted on labour’s side is drink. It is as inimical to a complete realisation of the new aspirations as the fixed idea of the stiff-necked employer that what he has never done nor seen done can’t be done. It is as inimical and even more difficult to conquer, for the employer eventually must yield his will or his place. The economic advantages of his competitor who accepts the new ideas will take care

of that. But the economic advantages of sobriety have never been doubtful. Nobody knows them so well as the workingman and his family. If he is to break with drink other appeals must be made.

It is for the employer to find these appeals. He must do it. Drink interferes with every item in the programme on which he has set his heart. A drinking man makes stability out of the question. He is a barrier to efficiency. He is an enemy to safety. Drink must go.

It is the Safety First movement which has done most to fix the attention of the industrial world on the relations of drink to its new aspirations. Two years ago I attended the annual congress of the National Safety Council. There were some 300 Safety experts and managers present representing our leading mining, manufacturing and transportation concerns. There was scarcely a session held in the three days the council sat that the relation of liquor to safety did not come up. Again and again there was vigorous warning from experienced experts that safety was out of the question as long as men used liquor. It was not because they had as a rule, I judged, any objection to liquor per se — many of them frankly said they liked their beer or wine — but when it came to liquor drinking by workingmen they attacked it as violently as they did uncovered wheels and gears and belts.

“Alcoholism as an abstract proposition does not interest me,” the secretary of the New York Workmen’s Compensation Bureau told the congress,

"but it has been my painful duty to investigate many accidents where I have had positive proof that the mishaps would never have occurred had it not been for the liquor curse. I don't believe we shall get worth-while results (in safety) unless we place our mark of disapproval on the liquor question immediately."

The really significant and helpful feature of the discussion was the multitude of indications it brought out that managers were beginning to apply to this problem the same methods they use in safety work. When an accident happens now-a-days in a properly organised factory or mill nobody lays it to the Lord. Nobody repeats that "accidents will happen." Everybody seeks the cause and there is no rest until it is found and removed. The new attack in drink follows this principle. It asks *why* do men drink?

The old answer of the moralist, the thrifty and the hard-headed was likely to be either because he is an unregenerate sinner and needs conversion or because the liquor is where he can see it. The old attack on liquor followed these ideas. Men were exhorted to let it alone — stirred to their depths until they "signed the pledge" or the saloon and the beer wagon were cast out of the community.

Neither exhortation or prohibition satisfy the modern scientific manager. Men must be sober for other reasons than emotional stir or the difficulty of getting liquor, if temperance is finally to prevail in industry. *Why* do they drink? In this search for causes the inquirer is using a great deal of common

sense and practical home-made physiology and psychology — knowledge of the body and the heart, that he has acquired in his own struggle for decency and control. It is remarkable how many shrewd, quiet men you find who tell you that they are almost persuaded that if all was right with the body and mind the man would not *want* drink in possibly a majority of cases. He wants it because something is wrong. It may be because his body is so depleted at the end of the day that it runs for its grog that it may get a few brief moments of glow and strength and well-being.

This is the workingman's own plea: “I take it because I am all in.” It is understandable. The first experience in exhaustion, in failing nerve and hopelessness is terrifying to one who has had strength and health. He grasps at anything that will give him back even for an hour his sense of well-being and confidence. Collapsed energy is as real an ill as a broken leg and more to be feared because less understood. Industry is trying to understand why it comes so early to so many, and many men are frankly admitting that often it is because of long hours, poor air, bad water and cold lunches taken under conditions that would make even good food which they rarely have, indigestible. The men are so done up at the end of the day that they take liquor as a means of quick if brief recuperation.

There is no little proof of the soundness of this view to be drawn from the experiments of factories who have corrected these evils. The Clothcraft

Shop in Cleveland is a brilliant example of the effect that the best of shop conditions has on the saloon. Mr. Feiss tells me that as soon as they had their lunch room and recreation grounds in working order there was an immediate reduction in the number of men patronizing the neighbouring grog shops. "With the aid of moral suasion," Mr. Feiss writes, "this effect grew so that two out of three saloons in our immediate proximity disappeared. We finally went to our men and asked them to remain on our premises during the noon hour, issuing passes only to those who went home for lunch. The effect was to drive away the remaining saloon, and no one has since attempted to establish one in our neighbourhood."

How much has good food to do with this result — which is one that I have known in other cases? This much is certain, with plenty of wholesome, well-cooked food, men work more easily and continuously than they do when they mix alcohol with food. Those who have read Forbes Mitchell on the Great Mutiny will remember his repeated testimony that what men need on exhausting marches and before and after battles is "grub," not "grog." "My experience is," he writes, "that the soldiers who could best look after their stomachs were also those who could make the best use of the bayonet, and who were the least likely to fall behind in a forced march. If I had the command of an army in the field my rule would be: 'Cut the grog, and give double grub when hard work has to be done!'"

Some of our modern employers are revising this formula to read “cut the grog and give *milk*.” So formidable a competitor of beer has milk become in some quarters that I have seen advertisements advising workingmen to remember that beer is the most healthy drink in the world *after milk*. Dr. Harvey of the Crane Company in Chicago, a concern where for years the most careful and intelligent study has been given to every phase of the workers’ life, believes that milk may take away the desire for beer. “For many years,” Dr. Harvey writes, “our company has encouraged the consumption of milk by employés. The company permits a milk dealer, whose milk is approved by the City Health Department, to go through the shops with bottled milk and sell direct to the men at their work. Employés, in the habit of taking a lunch in the middle of the forenoon, thus get a nourishing lunch of milk, instead of indigestible bologna, sausage, pickles, etc. The milk men also time their visits and have their wagons at the front doors of the different shops, so that workmen may provide themselves with milk for the lunch hour. This practice of encouraging the use of milk is believed to have reduced the amount of beer formerly consumed.”

An even more potent cause of drunkenness than poor food lies in the fact that outside of his home a workingman often has no club, no bank, even no toilet room but the saloon. His hours have been such that they made it impossible for him to deposit or cash a check in a bank. Often he never sees the

inside of a shop of any kind unless on Saturday night. The extent to which a workingman is cut off from the ordinary conveniences and meeting and trading places of men by his hours, the location of his working place, the condition in which labour leaves his clothes and his body at the close of the day, have rarely been taken into count in studying the attractions of the saloon. He was forced to use it, and as long as he had money to buy a drink he found the saloon cordial and democratic. "Cash your check? Sure."—"Wash up? Sure." "Sit and read? Sure."

When the nickles and dimes cease to flow across the counter this welcome is quickly chilled. Nobody without money or credit can use the saloon. This the deluded workingman finds when he loses his job.

Saloons in the neighbourhood of factories feel the effect of every convenience and comfort installed. "We have closed one place near us," I heard a business manager say once, "simply by cashing the men's checks. We wakened up to the fact that they were forced practically to buy a glass of something to get their money."

There is no body of men so wedded to grog that it will not be influenced by good food, amusements, opportunities for improvement and the personal interest of their superiors. A striking demonstration of this is reported by the Lake Carriers' Association. The men on the Great Lakes in the past have worked under about as bad conditions as could be

conceived, with the result that usually the chief thing they provided for a trip was a jug of whiskey. Six years ago the Association set heartily to work to make things over for the men on their particular boats. They have provided the best of sanitation and ventilation, the food and water are carefully supervised. Quarters are comfortable. Assembly rooms are provided at the various ports frequently with night schools. Since this campaign of improvements began accidents due to intoxication have been automatically cut down 75 per cent. The improvement has been so great that recently the captains and engineers of the boats sent to the Board of Directors of the Association the following recommendation, begging that it be adopted:

That all masters and chief engineers of the Lake Carriers' Association be instructed that temperance shall be encouraged as much as possible among the crews and be made a consideration for promotion as between men of otherwise equal merit. Further, that notice to the effect that drinking is prohibited aboard the boat and that no person be allowed to carry liquor aboard the vessel be posted in the rooms of the deckhands and firemen. Further, that the Lake Carriers' Association provide temperance pledges and buttons in their assembly rooms and aboard the vessels for free distribution among the men.

Let those who scorn “ welfare work ” ponder these things.

Quite as potent a cause of drunkenness as bad conditions is the lack of pleasures, of “ things to do.”

Almost anything which arouses the interest is an enemy to liquor. I have known the trade of saloons seriously cut into by school gardens in the neighbourhood. The men became so much interested in what their youngsters were doing that they helped in the gardens after work instead of going to the saloon. That is what has happened in the coke villages of Western Pennsylvania, whose gardens are described in Chapter VI. There are no saloons allowed in these company towns, but a beer wagon makes the rounds once or twice a week leaving a keg or crate of bottles at almost every house. When the gardening season opens it will sometimes lose a customer for weeks. "Tam gartens," one of the drivers was heard to say—"eatin' up my pizness!"

There is no doubt that one reason Vandergrift, Pennsylvania, has been so successful as a "dry" town is that the workingmen run it. When Vandergrift was founded there was but one restriction put upon the property. For 99 years no liquor was to be sold within its boundaries. The working people with whom this contract was made were admirably adapted to respect and support it. They were as a rule American born, most of them from farms in the neighbouring counties. By training and tradition they were temperate. They believed Vandergrift's future would depend in a very large degree upon its no-liquor policy, and this has proved true.

It is now a town of about 4,500 inhabitants. Ninety per cent. of it is owned by men who work for wages. These men carry in the Savings Bank over

a million dollars, and own something like 125 automobiles. That is, they and not saloon keepers are getting rich. It is peaceful as well as prosperous. Two policemen on twelve-hour shifts look after law and order, and they say in the town that the one on duty can generally be found asleep on the steps of the Casino. This Casino, most effectively placed on the town's largest plaza, has two wings; one houses the library, and the other the town council and jail. I have heard the librarian argue that the jail is used so little she ought to have it for books. It is sometimes needed, however. In the first three months of 1914 five different persons spent a night there, two of them tramps glad of free lodging. It was a fairly typical record.

A clergyman who came to Vandergrift after having spent years in other industrial towns of Pennsylvania, told me that never in any community where he had been stationed had he known of a working-man on the official board or carrying the plate on Sunday. Here there were no others to perform these duties. Workingmen make up the Town Council, the Board of Education. The men have places to go, things to do after working hours. They are responsible citizens, carrying a town on their shoulders, and both the dignity and the seriousness of the task keeps them steady.

If Vandergrift like the average “dry” town had been run by politicians, merchants, and the professional class, the man with the dinner pail being practically excluded from office and the urgent feel of re-

sponsibility, it is doubtful if prohibition ever could have been the complete success it has been.

If the public and the workingmen as a body would back up the employer if he refused to hire a man that drank, the problem would be simplified, but there is only one industry in which, so far, this is done, and that is railroading. Among the general rules in the standard code of The American Railway Association is the following:

The use of intoxicants by employés while on duty is prohibited. Their use, or the frequenting of places where they are sold, is sufficient cause for dismissal.

The rules contained in the Standard Code have been adopted by a great many of the railroads of this country. It is probable that the public would support the railroad in enforcing the rules to the letter. Whether the courts and unions would is uncertain, though they have already put themselves on record as supporting dismissal for intoxication. In 1913 a passenger conductor was dismissed for intoxication while on duty by the St. Louis Southwestern Railway. The Order to which this man belonged took up his case and secured a strike vote. Before the strike was enforced, however, such conclusive evidence that the man had been drunk was put before certain members of the unions interested that a committee of them challenged the vote, and obtained a Court injunction. The case finally went before the Federal Board of Mediation, and was settled by the unions withdrawing their demand that the dismissed

conductor be re-installed. The point of interest here is that as the judge who granted the injunction said, “It is conceded on both sides that if the conductor was intoxicated as charged, he was properly discharged.”

As things now are the employer or manager who has set out to make “sober first” the rule of his shop will have no such backing as the railroads find. His first attack and his most fundamental one should be on conditions. But he knows well enough that it will be a long day before good conditions alone will control or even make a very sweeping change in the drinking habits of many groups of workingmen. They have the habit as a class. The extent to which this is true both statistics and observation show. The ten States in the country having the largest number of men in manufacturing pursuits in 1910 were the ten States (with two exceptions) having the largest number of saloons. That is, the curve of the saloon in the United States is approximately, not exactly, the curve of the workingman.¹

¹ The ten States having the largest number of wage earners in manufacturing pursuits according to the last census are, New York, Pennsylvania, Illinois, Massachusetts, Ohio, New Jersey, Michigan, Wisconsin, Indiana, Missouri.

The ten States having the largest number of saloons in the same year—1910—were, New York, 36,915; Illinois, 24,253; Pennsylvania, 22,849; California, 17,500; Ohio, 13,282; Wisconsin, 12,710; New Jersey, 11,871; Missouri, 8,961; Michigan, 8,782.

There is one striking omission from each list. California, the fourth State in number of saloons, does not appear among the ten which rank first in number of wage earners. Massachusetts, which is fourth in the list of workers, does not figure in the saloon list.

Observation in and near manufacturing districts corroborate this curve. Stand at the close of the working day near the exits of factories in open towns, and watch the men fill to crowding the saloons. Go to the mining towns where saloons are forbidden, in every yard, in the alleys, often in the little hallways, you will find conspicuous in the litter which makes them horrible to see, piles of empty beer bottles, kegs and crates. They are left-overs of the weekly spree at home.

A still more vivid exhibit of the support the workingman gives whisky and beer is the fringe of saloons and "joints" on the outskirts of "dry" or regulated industrial towns. One of the scandals of Gary, Indiana, that marvellous new made city, has been the "Patch," a wedge of land running into Gary, but not owned by the town, and so not subject to its liquor restrictions. The Patch became a street of such lawlessness and hateful disorder as possibly did not for a time exist east of the Mississippi, though to-day its worst period is in a fair way of being outdone in the hasty powder and munition settlements which war and greed are throwing together in or near so many great industrial centres. With war go all the vices.

What is to be done for and with these tens of thousands who drink because they have always done so, and upon whom no change of conditions make an

Missouri drinks more than she works, so to put it, her comparative place in the two lists being 8 and 10. So does Wisconsin, her rank being 6 and 8.

impression? Our modern employer is a tireless experimenter. He thrives on problems human as well as mechanical. He is ready to try anything. He is becoming one of the best patrons of drunk cures that there is in the country, and though he by no means is always rewarded, the percentage of success justifies trying it in many cases. Procter and Gamble of Cincinnati have for years sent men on whom no persuasion had had effect to a cure and with encouraging results. One man was sent three times before the appetite finally yielded. He has been sober so long now they consider him cured. There are not many employers in the country who would show the same patience, but Procter and Gamble have always had a high sense of their responsibility.

The man who has set out to make “sober first” the rule of his shop uses the drink cure, and he by no means despises Billy Sunday. He knows that men often have so lost self-control and self-respect that nothing will avail but a rough jar, a liberal pounding of head and heart such as Sunday gives. The result of his work, particularly in the steel and iron towns of Western Pennsylvania and Eastern Ohio, corroborate his judgment.

Sunday’s famous sermon on “booze” has again and again brought audiences of thousands of men to their feet in an almost unanimous judgment that they and the world would be happier on a water basis. “Come up here, kids,” Sunday cries out. “Come on, let them see you.” A dozen or more boys walk out sheepish and awkward to the front

of the stage. "Men, you see before you the raw material of the saloon. There isn't a drunkard in the world, or one who has gone to his grave in hell through liquor, who one day was not exactly like these boys. Look at them, innocent, clean pure, with every prospect in life! They are what whiskey preys upon!"

Who could be so hardened that he would resist this plea? Sunday has swept the saloons of hundreds upon hundreds of patrons in his campaigns. How permanent have the results been? I put this question to an officer of one of the greatest plants near Pittsburgh, one truly desirous of seeing liquor put under.

As far as lessening the number of saloons in either Pittsburgh or Allegheny County [he answered], I do not believe it has made a particle of difference. I do believe, however, that in individual cases there has been a great deal of lasting good done; for instance I know of two puddlers who work for our company who were drunk nearly every night of their lives, and, after coming under the influence of Mr. Sunday, neither of them have had a drink since. I believe there has been considerable good done in this way. Sunday was in our town six weeks about three or four years ago, and I believe the good effects of his work are still felt in that community.

This answer averages well with a score I have received from fair-minded men in positions to know the aftermath of Billy Sunday's exertions. It is a method which will never be abandoned as long as

men get down where so many of them are when Sunday attacks them.

Quite as direct as Sunday's method, though less pungent and emotional, are the appeals of the safety bulletins and factory organs which many corporations and firms now support. The liveliest amateur editing I know is done in these little periodicals. The fixing of drink as a large factor in accidents has turned all the safety sheets into temperance advocates. Satire and ridicule are the chief weapons. There are few men who can get away from a paragraph like this which is now going the rounds of the bulletins.

FOR THE MARRIED MAN WHO CANNOT GET ALONG
WITHOUT DRINKS, THE FOLLOWING IS SUG-
GESTED AS A MEANS OF FREEDOM FROM
BONDAGE TO THE SALOON:

Start a saloon in your own house. Be the only customer. You'll have no license to pay. Go to your wife and give her two dollars to buy a gallon of whiskey, and remember there are sixty-nine drinks in a gallon of whiskey. Buy your drinks from no one but your wife, and by the time the first gallon is gone she will have eight dollars to put into the bank, and two dollars to start business again. Should you live ten years and continue to buy booze from her, and then die with snakes in your boots, she will have enough money to bury you decently, educate your children, buy a house and lot, marry a decent man, and quit thinking about you entirely.

You can count, too, on these factory bulletins making excellent use of every item of news that

makes a temperance argument. Such paragraphs as the following go the rounds of the greatest factories in the country.

A recent dispatch from Kansas City states that Kansas has purchased, in the past year, \$37,000,000 worth of motor cars, and that some bankers are apprehensive as to whether this continued drain on the resources of the State may not, eventually, be very much felt. A Wichita president is not troubled, however. "If you will compare our bank deposits for each year," he says, "you will note a steady increase in them, so we are not loaning money to buy automobiles, neither is there any decided decrease in the banks of the State, either national or state. We are buying our automobiles and paying for them, and I do not believe anybody need have grave apprehensions as to the result upon our general finances.

"There is another side to this problem that I am wondering if the general public has figured on. Reliable statistics show that a sister State spends \$24 per capita for liquor per year, and that Kansas spends \$1.50 per capita for liquor of 1,700,000. If I figure it correctly, this gives Kansas something over \$38,000,000 to spend each year, which the sister State does not have.

"The money spent for liquor fills orphans' homes, puts widows over the washtubs, keeps insane asylums running overtime and does a fair job of filling up the pauper end of the cemeteries. The Kansas man who buys an automobile, loads his family into the car, takes them out into open air, prolongs his own life and gives his wife and children something of what is theirs by right.

"I think our financiers need not worry about our automobiles until they have solved the problem of the awful waste of the liquor traffic."

None of these efforts cover the entire field. There are always good workingmen that conditions do not touch. There are men who will not take a cure, and can hear Billy Sunday unmoved. Their cases go deeper and to reach them some of the finest kind of individual work is done. Not done simply in small shops of a few hundred employés, but in big ones of several thousands. There are no rules for treating Tom, Dick and Harry. The head of the service bureau of one big concern, a man who meets problems with fine intelligence and sympathy, declares that it is as difficult to say how he would handle an incorrigible case as it would be for a doctor to diagnose a case without seeing the patient. He studies his man, finds the point at which he thinks he can be touched and then prepares for his attack. He tells of one man whom he was unable to reach until he discovered he was extremely sensitive to ridicule. On two succeeding sprees he told an impossible story as to the cause of his absence, and by spreading the story among the other foremen and his fellow workmen, they made life miserable for him with unmerciful kidding. This was ten or twelve years ago, and he has never been drunk since.

At the Ford plant in Detroit where at this writing some 20,000 men are employed there is an untiring effort to secure sobriety. There is no attempt to bring men to signing the pledge so far as I know, no interference with the regular glass of beer. It's “getting drunk,” which prevents the

"big envelope" (the \$5.00 a day) going to a man, or takes it away. There are numberless cases of men picked out of the gutter, put through a "cure" and now on the straight road. They will go to any length in their war on the liquor habit. Mr. Lee, the former head of the sociological department says emphatically, "We'll do anything." He tells of one case where a man, who had boldly made himself drunk in the presence of an investigator, was carried bodily to a cure. To-day, so far as one can tell, he is forever done with liquor. "Eating out of his wife's hand," he was described to me! The loyalty of that wife to Ford's is eternal.

The man once cured, has, too, nothing but gratitude. One of the most wonderful temperance lectures I ever heard was from a man of thirty who had been brought into line through the determined efforts of a Ford investigator. He was a clean, fresh boy, still solemn with the wonder of his redemption. "Lady," he said, "if, when I was a boy, somebody had talked to me as these people have, if there had been anybody to be interested in me like they are, I'd have money enough laid up to live without working. I'm a good workman, always was when I was sober, but generally I was in the gutter. I wasn't happy! No drinking man is. When I went home nothing looked right to me. I didn't like the way my supper tasted, and I didn't like my wife's looks. I was breaking down too. I hadn't a friend. Talk about the saloon keeper being a man's friend. He is when you have money

to spend, can't do enough for you. Pats you on the back, cashes your orders, lets you sit and read, do anything so long as you drink, but when you stop, he stops. I met a saloon keeper to-day that I've paid a lot of money to, and he didn't even speak to me. Nothing to it. I'm happy now and so's my wife. I like my home, and I eat good; why I've gained twenty-five pounds since I stopped," and so on, an earnest convinced testimony to the benefits of sobriety.

Of course there are those that fall. But that does not mean they are given up. The truth is the Sociological Department at Ford's seems to hate to give up a man as much as the Sales Department hates to give up an order. They're "making men," and they won't accept defeat. That they're held to this by Henry Ford is certain. "Tell the committee they'll have to guess again," he sent word in reply to a report that said a man was hopeless, and better be discharged. "Do you mean to tell me that a great big concern like this with all the time and money it needs must give up a poor weak wretch that probably never had a chance. Make a man of him. Find a way."

Where a factory has a Medical Department, breaking up drinking habits is much simpler. The physician is able to demonstrate to the workman the physical degeneracy that drink causes. He can show the connection between hardened arteries, diseased kidneys and liver, and he can follow a hard case up as was impossible before the days of

factory dispensary and examinations. Again and again men are literally frightened into sobriety. One doctor tells of finding in 1912 in his routine examination an old employé with an enlarged heart, irregular in its action and a high blood pressure; a thin, trembling man, who was a chronic drinker. "He and I discussed his condition in plain terms," the doctor says, "and since his work was not hard, he was allowed to go back to it. In 1913 his condition was distinctly worse, so much worse that for safety's sake his work had to be changed to something easier. Again I told him how his habits were destroying him, and urged him to drop them. But he didn't, though I saw him often. In 1914 I found him a wreck. Try as hard as we would we could not think of a job in the entire plant that he could do safely. A man only 54 years old, yet tottering and trembling, with a rickety heart and a dangerous blood pressure, a premature human wreck. I think I never pleaded and begged and argued and laboured and berated any man as I did him. I told him that the scrap heap was waiting for him, and he was ready for it, and the work had been produced solely by himself and John Barleycorn.

"Finally, since he was an old employé of the company, a job was made for him, and we let him think he was working, for he and his must live. I was heartsick and thoroughly discouraged. Soon after that he left the employ of the company, and I lost track of him.

“One year and four days later, he came back. I scarcely knew him. He was clean, his skin was clear, his hand was steady, he had gained eighteen pounds. His heart was regular and he looked like a man. When I shook hands with him, there was a lump in my throat. Finally I said, ‘Well, Nick, tell me all about it.’ He replied, ‘Well, Doc, there ain’t much to say, except I ain’t took a drink since the day you and me talked things over, a year ago.’

“To-day he is doing the work he did several years ago, and is doing it better.”

“Find a way” is becoming in scores of the greatest and richest manufacturing concerns in the country the rule in regard to drink as it is in regard to safety. I doubt indeed if there is any agency to-day making anything like as persistent, spirited, ingenious attack on the use of liquor as that of our modern industrial management. The attack is only just begun. It is bound to go on as is that on long hours, unfair distribution of profits, inefficiency, autocracy of management, blind alleys — every evil that hampers the full development of industrial life. Progress will be the more rapid because it is becoming clear to so many that here as at other points that which was looked on as a purely moral question is also an economic question. It is another one of accumulating proofs that only good morals are good business. This realisation brings a professional and scientific spirit to the handling of the liquor problem which it has almost always lacked. It takes it out of the amateur class.

Certainly it cannot be forgotten that there have always been in our factories and shop employers who concerned themselves sincerely in the question. They were men with a large sense of personal responsibility. They could not get away from the Biblical hint that we are our brothers' keeper; but usually they looked on their efforts as a social or religious duty, not as a natural part of their business management.

On this type of employer, their hard-headed colleagues have always made a sharp attack. They were engaged in a struggle to establish the principle that humanity had nothing to do with business. The man who practised it was a traitor to his class. Business had but one end, and that was profits. The relations of those in it consequently were impersonal and mechanical. Such a conception of any human undertaking is bound to fail. It is contrary to the nature of men. Hard and brutal and greedy as they may exhibit themselves, there is in them all wells of sentiment, of good feeling, of love of justice. These springs can be capped until they dry up, but it takes years to do it.

The realisation by progressive industry that the hard conception that greed and narrowness have tried to fasten on it was a fatal economic error, has come to thousands of younger men as a revelation. It has loosened powers and impulses and enthusiasms which they had never suspected in themselves. They are finding in business possibilities for service, for citizenship, for the development of

both themselves and those under their direction, which give to work a new meaning; to moral issues a fresh reason. It is this loosening of their powers which is giving new life to many an old hope of this tormented world and among them that of a day when no man will put an enemy into his mouth to steal away his brains.

CHAPTER VI

GOOD HOMES MAKE GOOD WORKERS

Bad habits are no more inimical to improving industrial groups than bad homes. One of our greatest safety experts says that safety is impossible if a man is poorly housed and fed. An experimenting and successful manufacturer employing hundreds of girls declares that unhappy homes make unstable payrolls. Competition itself is forcing employers to consider the outside life of their employés. The first and most important thing they must consider is the house the man lives in.

A good working man wants a home, wants it more, on the whole, than any other thing. He wants, if possible, to own his home. Wherever you find stable industries in this country you find the wage earner buying a bit of land and building a house. It is he who pushes the cities out in long lines of tiny cottages. It is he who opens "additions" and suburbs. It is he who supports the extensions of car lines, water, gas and electric mains. Take the street car in various directions from a growing place like Kansas City and note the miles and miles of gay bungalows and trim houses. It is the man on wages who made the building of them necessary.

In Grand Rapids, Michigan, an industrial town of some 112,000 inhabitants, there were, in 1914, when these figures were obtained 24,407 residences. The greatest number of these were workingmen's houses, street upon street of them. Building and loan associations and the banks which made a specialty of loaning money on workingmen's homes say that 90 per cent. of the married labourers in the town, skilled and unskilled, own houses. The average cost of these is about \$2,000. They are, as a rule, paid for in ten years. As the average wage is only a little over two dollars a day it demands thrift to own these homes. It means plain food and clothing, inexpensive amusements. But happily in Grand Rapids it does not mean the sacrifice of education, books, or pleasant out-of-door life, as these are all provided by the city.

Nine years ago a superintendent in the Fairbanks Manufacturing Company of Beloit, Wisconsin, found on his hands a piece of condemned land in a new quarter of the town, but convenient to the factory. He decided to try building houses there for the married men in the plant. In seven years he built one hundred and thirty, all of which were quickly taken and on no one of which has he ever lost a cent. The terms were easy. The first payment was frequently as low as \$25. I went through an attractive, well-built house with a good furnace, gas, water, electricity, and land enough for a garden, which the occupant was buying for \$20 a month. The rent of such a place was about \$14 in Beloit.

There were plenty of men, even on \$2 a day, who were willing to take the burden of such a place on their shoulders. What did they get? What do any of us get from a place "of our own"? A sense of security and privacy and independence — a place to tinker and play with. We get, too, the sense of property. The house earned has been in many a family's life the beginning of its independence.

Happy is the employer who can shift to the shoulders of landlords, of building associations, of banks and of speculators the responsibility for the kind of a home his employé lives in. He can only do this when he operates within or near a town. Let him go into remote and unsettled districts and immediately town building is forced upon him. If he does it stingily, half-heartedly, he is sure to reap as much trouble as he does from defective machinery, if he does not ruin utterly his chance of success. It is in the case of enterprises which are of uncertain or temporary duration that the difficulties are greatest.

If a company opens a mine in the mountains, scores of miles from a town, it must build a village, and it must own it, for the simple reason that mines are not necessarily durable properties. They "run out," and when they run out the town is abandoned, its houses are as useless as the shafts and the galleries. Under these circumstances no miner can be expected, or would he desire, to own his home; no more would outside builders venture investment.

The company is compelled to be its own landlord. It is frequently compelled to be its own town council, schoolmaster, policeman, justice of the peace. As the body of the working people will be non-English-speaking and of many nationalities, few of them will understand American standards of living, even less will they understand our social and political customs. The management will not understand the miners. Nine times out of ten it will tell you — and believe — that they prefer to live like swine, and that there is no sense in attempting to provide anything convenient, attractive or orderly for them. But is it true? If this foreign miner and his family had a chance to live decently would they do it? Yes! Nineteen times out of twenty they would. If any one doubts it, let him look at the results of the efforts which have been making for several years to redeem the towns of the Frick Cole Company in the famous Connellsville district of Western Pennsylvania.

There are probably no mining towns in this country which are such ghastly living places as the coke towns. The ovens — I am speaking here of the old beehive oven which belches its smoke and gas into the air, not of the modern by-product oven, which largely consumes them — the ovens are built in long rows, twenty, thirty or fifty of them side by side, and convenient to the mouth of a mine. As the coal is lifted from the shaft it is carried to the oven. Night and day the semi-combustion goes on.

When the coke is taken from the oven it is

screened or sifted. Rapidly there grow up around the ovens and the mines range upon range of these coke screenings, black, desolate, and indescribably arid and dirty. What greenness and fertility the screenings do not bury, the smoke and gas kill. I have seen hillsides, against which the prevailing wind turned the coke oven gases, more lifeless and hideous than any desert on earth. To add to the horror of it, the clear streams are turned to a yellowish-red by the torrents of water pumped incessantly from the mines. In some places for every ton of coal ten tons of water are lifted.

This is what the coke industry does to its immediate neighbourhood. No place for man to live, one would say, and yet hugging close to the desolation are the "company houses." The houses may have been fairly good at the start, many of them are very good, and in almost all cases, especially in this particular company, they have generous space around. Moreover, the rents are reasonable. Houses with four good-sized rooms with at least an eighth of an acre of yard rent at \$5 a month. The largest are not over \$10. Fuel is free in nearly all of the coke settlements if you will cart it. The wages are fair, \$3.75 a day on an average, with \$2.15 for nine hours to the unskilled inside man.

This sounds well, and when the mine is opened and the houses new is not bad. But almost immediately the operations of the industry ruin the settlement. Smoke and gas discolour and destroy all freshness. Screenings pile up until sometimes the

houses are standing in canyons. There are no sewers, no pavements, no fences. Refuse and filth collect. Rains cut out gullies and pile up banks, and over it all wander at will pigs, geese and children.

I doubt if the villages of the Frick Coke Company were ever quite as desolate and unsanitary as many that are still to be seen near Pittsburgh, but they certainly were unfit for men and women to live in, and a few years ago the company decided that they must be redeemed. The leader in this undertaking was the president of the company, the late Thomas Lynch, the man who twenty years ago introduced the "Safety First" crusade into his mines. The order that came to the mine superintendents was, briefly: Clean up the towns; grade the streets and put in cement curbs and walks; fence the yards and cover them with sufficient soil to enable the residents to raise flowers and vegetables; provide new and approved vaults; put water in the kitchens; add porches; paint the houses; keep the alleys as clean as the streets, and teach and encourage the people both to keep their places clean and to make gardens. This order applied to twenty settlements, four thousand double houses in all.

Some of the superintendents had an idea that the management had gone crazy. "It couldn't be done." "People wouldn't appreciate it."

It is certain that at the start the people were luke-warm. In one case where the houses had been so deeply engulfed that there was no helping things

the order came to rebuild them on open ground. When this was attempted the tenants made an uproar. Men even went to the company's headquarters to see Mr. Lynch. They had lived for twenty or more years in those houses. They were their homes. If they were torn down they would leave the mines. "They're going to be torn down," Mr. Lynch told them. The superintendent followed them. "If we tear down these houses we'll have to close the mine. The men won't stand for it." "Close the mine," was Mr. Lynch's reply.

That was five years ago. In the fall of 1913 I spent three days driving from settlement to settlement to see how nearly the order had been carried out and what response the people had made. I have never had a more conclusive demonstration that no living conditions can be so bad that they cannot be redeemed, and that no fallacy is more complete than the oft-quoted one that foreigners prefer to live like swine.

In those three days I visited at least a dozen of settlements, and in all of them the programme had been applied to conditions fully as bad as those I have described. The general decency of things in contrast to the former awful indecency first struck one—the decency, the order, and the cleanliness. I doubt if there is an established town in the United States that can show as clean alleys as dozens through which I drove.

One of the changes going on at the moment in several places, in which tenants, superintendents, and

particularly Mr. Lynch, were taking the liveliest interest, was putting water into the kitchens.

"When I was a boy," Mr. Lynch said, "I had to carry water half a mile for my mother, and dip it up at that. When I built these houses twenty years ago I put a hydrant into each street, and I thought I was doing a fine thing. To have water just outside the yard by simply turning on a spigot seemed to me all the human heart could wish. Of course I ought to have carried it into the houses, but it never occurred to me."

The impression of these towns last to die in my mind will be the miles and miles of trim white fences and outhouses. It was interesting to see how contagious the painting was. The company paints everything once a year, but I found several ambitious women and one or two men who were putting fresh coats on the front porch and on the fence, something to make them a little finer than their neighbours.

When the company began its work I doubt if in all the eight thousand dooryards there was a bushel of soil in which a seed could sprout. Thousands upon thousands of loads of dirt, manure, and lime were carted, and the results awaited. There were those who sneered at the idea that these men and women who, some of them for twenty years, had lived on barren ash piles, would make gardens. But they didn't know their world. They fell to gardening as if it had been their yearly habit. In 1912 out of some seven thousand families in the

different settlements 5,149 had gardens of some kind; in 1913, 6,293; in 1914, 6,923.

And they were serious gardens.

To encourage them, the company offers in each settlement a first, second and third prize. The judges are chosen from neighbouring farmers. In 1913 at one settlement there were nine plots so good that the judges could not decide between them. They spent three days over the work and were coming a fourth when Mr. Lynch heard of it. It was an imposition, he said, to allow them to give so much time; he would give nine prizes. And he did. It was October when I visited the settlement, and they were still discussing the contest. I was taken from yard to yard to see what was left of the glory, and in the "best room" of the cottages was shown, often gorgeously framed, the certificates each prize-winner had received.

There is much more than glory comes from the gardens. In 1913 I saw many cellars packed with enough potatoes, beets, onions, carrots and other vegetables, to carry the family through the winter, and at one place I saw twenty-five hundred heads of cabbage sold by a miner to the company store. It is estimated that in 1914 the vegetable gardens yielded crops worth nearly \$143,000. It was a veritable godsend in the dull times.

The redeeming of the towns has cost money. Upward of a million dollars has been spent: more will be spent, for the plans are steadily enlarging. At one settlement a commodious clubhouse with out-

side swimming pool and play-grounds for the children has been provided. Others are to be built. The company has put many thousands of dollars into ball grounds. The housekeeping centre has been introduced at one place.

Why is this done? Why have the duties of mine superintendents been stretched to include town sanitation, gardening and amusements? Why is the trained nurse becoming a regular member of the superintendent's official force? It is not charity. It is not law. It is not public opinion. It is not advertising. You may argue that all these forces have influenced the policy. No doubt they have; they influence all human actions more or less directly. But they do not explain the redemption of the Frick Coke Towns. This redemption is as much a part of the company's business management as the method of taking out coal or making coke. They believe that the success of their business depends more upon their labouring force than upon any one other element. To have efficient, trustworthy, and steady men you must have healthy and contented men. Men are neither healthy nor contented in wretched homes.

Moreover, workers naturally gravitate where the conditions are best and the opportunity largest. In the great mining district of Western Pennsylvania this concern can keep its shifts full when every other mine is short of help. It has its choice of steady, able, ambitious miners. It has run unmolested for months when all about neighbouring mines were shut

down because of strikes brought on by refusals to grant that which this concern provides as a matter of course, as a feature of good management. If these things pay, then the redemption of the coke towns pays.

The power of the company in these towns disturbs many. They have in mind the abuses which are so familiar, and they are as prone to believe them inevitable as the companies are prone to believe the miners incorrigible in their disorder and filth. There is the company store. It is as difficult to convince a critic of the present order that a company can run an honest store as that it can be a considerate landlord. The same circumstances that force it to be one, force it to be the other. The only question is whether it serves or exploits. The company stores in these coke towns are far better than the independent stores in the adjacent towns. The goods are fresh and admirably cared for. The prices are reasonable. There is no compulsion to buy other than that of circumstances. Carts from outside are free to peddle. The vegetables sold are often the products of the settlement gardens.

As for the government of the settlement being in the hands of the company, it is: but actually it rarely disturbs the course of things. Save in time of trouble the settlements run themselves. And there is very little danger of trouble when there is no exploitation, no harshness, no interference with personal freedom.

Even if the people in the coke settlements could own their houses they probably could not do better than to let the towns run themselves. Indeed, it is a question if all our small towns would not be better off if they had no more governmental machinery than these coke towns. Leclaire, Indiana, the headquarters of the Nelson profit-sharing scheme, has no town government.

It just runs itself, so far as policing is concerned [Mr. Nelson says]. So far as public utilities and the up-keeping of the streets, the lighting, water, the ball grounds, the lake, the hall and the kindergarten rooms, it is done by the employés of the company, and the company is, so far as Leclaire is concerned, the people who live there.

The residents could at any time incorporate a town government. Between a quarter and a third of the residents are not our employés; but I have never heard from any source a suggestion of wanting to incorporate. There have never been any rules of any kind to govern anybody's conduct, nor any occasion for arresting or even reprimanding any one. We have never in any manner discriminated about who should be admitted, either as employé or as resident. If there is work for a competent applicant he gets the work. If an employé — and sometimes other people — wants a house built, we build it, and on such monthly payments as he and we think he can afford, having due regard for his pay and the size of his family.

This complete freedom resting solely on voluntary economic and social action is, I think, the key to Leclaire success. I do not think there is any other town in which there is as much loyalty to the place and affection for their homes and social relations as in Leclaire.

Again and again in this country, when a man of affairs has found himself committed to founding a stable industry in a district so remote that he must provide a town for workingmen, his mind has been captured by the dream of building something, where health, beauty, freedom and prosperity should reign.

The means to realise the vision has been given to few. Possibly the most ambitious attempt was a pitiful failure from the founder's point of view. This was Pullman, Illinois, which failed from over-paternalism. Men want to putter about their homes; Mr. Pullman insisted on doing the putting himself. Women like to hang their clothes in the yard, Mr. Pullman provided an enclosure. But Mr. Pullman gave this country a standard for building and landscape gardening which was a revelation to many of us, and he gave, also, a valuable lesson in what not to do.

His failure had something to do with what is probably the most successful workingman's town in the country, at least one of the five or six most successful. This is the town of Vandergrift, forty miles northeast of Pittsburgh on the Kiskiminetas River.

This town — and the mills which made it necessary — was founded to meet the compelling needs of a healthy business. The business was that of making galvanised iron. It had been started sometime in the 70's and had limped along for several years; then in the 80's new interests took hold of

it. The man at the head was the late George G. McMurtry. In a surprisingly short time he brought the works from a negligible factor in the business to one where it was turning out more galvanised iron of a better quality than any other plant of its size in the world. It soon had burst its jacket, too, that is, it had covered all the available land for its purpose in its vicinity. Mr. McMurtry decided to move, and in 1892, twenty-four years ago he bought a farm of six hundred and forty acres on which he proposed to create a model industrial settlement. This property was only two and a half miles from the town where the original mills were located.

Before Mr. McMurtry made a plan for either mill or town he studied the best of both in this country and Europe. The towns he studied included Essen in Germany, Creusot in France, the co-operative villages of Belgium, the various English experiments, the communities of Russia. He came to his undertaking with positive, matured convictions as to what should and what should not be done, and to carry out these convictions he engaged the best-equipped specialists in the country: as an example, when it came to laying out the town, he chose Frederick Law Olmsted, probably the best landscape artist of his day.

It was fully three years after the property was bought before Mr. McMurtry announced his plan to the men in the works. It was done in an engaging little pamphlet called "The New Town."

The usual way of building a city [he wrote] is to build cheap, tear down and build again. No grading at first; no pavements; no sewers; no water; no light; no health or comfort. By and by, when the city has been built over once or twice, begin again by sections, grade, build sewers and other improvements; and then it is fit to live in — for those who have money enough. It costs an enormous amount of money to build a city in that way. That is why it costs so much to live in a city. And the city is not very wholesome or comfortable. Indeed, it is never finished.

Such of these things as belong to starting our town can be done for a small fraction of what they cost in a city. We shall do them beforehand, and put the cost of doing them into the price of the property. What we do will never have to be done again, because we shall do it right.

The things Mr. McMurtry proposed to start with were:

A site of natural health and wealth and beauty; drained; graded; flat but convenient; good roads and walks, not in squares but according to the lay of the land; such water as flows from mountain springs brought into houses; sewers; expanse of grass; trees; outlook; modern above and below ground; electric lights, telegraph, telephone. Every man to choose his part with the means at hand of supporting that part; the people to own their houses and control their pursuits. The means of health and enjoyment of life within reach of all inhabitants. Liquor not to be sold there.

We intend to make a better town than there is in the world for physical health and comfort.

It was in June, 1896, that Mr. McMurtry, through the land company which had been formed

to take over the new town (Vandergrift it was called in honour of the leading stockholder in the mills), announced that lots were for sale. "We are ready to sell lots. Have waited until the place is entirely ready. Now you can judge its value and buy intelligently."

There were 814 lots in the place, of which 200 were saved for business purposes. The first week 276 were taken by mill men, indeed none but mill men were given a chance to buy at the opening. Speculators came, but there was nothing for them and they went away jeering. They have never been back. There has never been anything for them to play with.

Building began immediately, a building and loan company serving the men. To-day Vandergrift has a population of about forty-five hundred people, most of them living in their own homes. These homes cost, lot and house, from \$1,800 to \$7,500 each, though the latter figure is exceptional. I should say that the average present value of the five to six hundred homes was about \$2,500. The building company will tell you that it has never been forced to foreclose on a piece of property in the town and that never but in one case has it lost money.

Now, of course, this means high pay. The wages of the skilled men who own the homes in Vandergrift are as high as ten dollars a day. There are rollers who make twelve dollars and fifteen dollars a day. That is, the town is not for the hun-

dreds of unskilled labourers without whom the plant could not operate. These unskilled labourers are and always have been foreigners, many of them speaking no English and poorly understanding American ideas. Poorly provided for in the original borough they early began to form settlements on its outskirts. One of these, East Vandergrift, is now a town of fifteen hundred people.

The land company met this need for cheaper houses by opening a new tract, beautifully situated and adjoining the original town, Vandergrift Heights. Here lots 25 x 200 feet are sold for \$150. Five dollars down and five dollars a month are the terms. The response to this opportunity was immediate. There are five hundred houses in Vandergrift Heights to-day, all but eight of which were built by labouring men — a majority of whom were foreign-born — and 95 per cent. of which are now owned by them. The Heights was until recently a separate borough with schools and churches of its own. Its great ambition was to have everything that Vandergrift had. It paved several streets and was planning for more when united with the mother town.

Vandergrift serves as an object lesson to all its neighbours. Old towns up and down the river that fifteen years ago would have no more considered laying pavements than building an opera house are now taxing and straining to make their streets like those of Vandergrift.

The remarkable health record of the original

borough has had a wholesome influence. Typhoid fever has been a terrible scourge in these river towns. There has never been a case in Vandergrift which was not brought in from outside. In five years — 1909 to 1913 — the deaths in Vandergrift, with a population of 4,500 were 181. In the same period East Vandergrift, with a population of 1,500 had 138, more than twice as many proportionally. Gradually the most ignorant and unbelieving come to recognise that good water, sewers, care of garbage, are closely related to the health and happiness of themselves and families, and they struggle for them.

It would be difficult in the United States to-day to find a prettier town, greener, trimmer, cleaner, and more influential than this town of Vandergrift, owned outright by men who daily carry a dinner pail. It is owned by mill men and governed by mill men. Organised as a borough with a burgess and council, the majority of the town government are labourers in the mill. The present burgess is a roller, three of the council out of seven are rollers and one is a twelve-hour man. In fact, except for an occasional shop-keeper, the men who work with their hands at the hardest of hard labour, making sheets of iron and plates of steel fill all the elective positions of trust and authority. They are in a majority on the council, the school board, the health board. They form largely the official boards of the churches. They carry the collection plates on Sunday. They make the society. I never have

found a community in which the kind of work a man does has apparently so little to say about the position he holds in the eyes of his fellows.

I do not mean to intimate that there are no social distinctions. There is a domestic service line drawn. There is a race line drawn, but there are many cases where character and ambition have broken both. Nor do I mean to intimate that the town life is particularly different from town life everywhere. The inhabitants, on the whole, seem to me to accept the exceptional physical advantages they enjoy with a normal amount of dissatisfaction, and to be busy with the problems of improvement that live towns the country over are agitating. I found the town council two years ago divided on the purchase of a motor fire truck. The school board was jealously discussing the Gary schools, and if they could or ought to imitate them. The librarian and her counsellors were debating the relative number of works of fiction and non-fiction to buy with a small income. The women were sitting in judgment on the town fathers, criticising their street-cleaning, their slow development of playgrounds, their toleration of pool-rooms.

The churches are most aggressive in their attacks on evil-doing, and I certainly know of no other town in the country where they have such backing. There are nine churches in Vandergrift and its suburbs, a population of twelve thousand. On a Sunday in April, 1914, when I looked over this church-going crowd I found by an official count that fifty-five

hundred out of the twelve thousand were at the morning services.

There are the same keen political differences as everywhere. Naturally Republican, it became Progressive in 1912 and the pendulum has not yet swung entirely back. There are a few Socialists.

The "cost of living" is a perennial subject of discussion, as everywhere. My own conclusion from considerable close questioning was that of an intelligent housewife, who declared that Vandergrift was about five per cent. dearer than the neighbouring towns and six per cent. cheaper than Pittsburgh. That is, Vandergrift is quite as human in all its wants and experiences as if it were not a "model town," a thing created, not allowed to spring up.

I have heard people argue that Vandergrift was impractical for anything but Big Business. (There seems to be an impression that, since the plant now belongs in the American Sheet and Tin Plate Company, and that, since that company is a subsidiary of the Steel Corporation, the town was built by the corporation.) Vandergrift is a product of *small* business. Its creator looked upon the health, prosperity and content of his employés as a part of his stock in trade. In building the new plant which was necessary to accommodate his growing business, he arranged for a town with the same care he arranged for the best machinery. "Don't imagine we're going to make it a hobby," he wrote in one of his announcements. "*This town belongs with the rest of our business management.* We shall

build it in the same spirit and with the same result."

Mr. McMurtry believed that men, given an opportunity to live in a clean, healthy, beautiful town which gradually they could own and govern, would become a permanent group of citizens working together like other citizen bodies. And this has happened. He believed this body of labouring citizens would furnish a steady supply of boys for the work — not manual labourers, but boys who, because of their association, naturally would turn to shop management, the offices, the laboratories, the sales department.

And this is what is happening. It looks very much like a self-perpetuating working force, as all forces are in part, at least, if they have real vitality in them and are working on sound principles. It is quite possible that the future general superintendent of the works is some lad in the Vandergrift schools who now is counting the days when he can "go to work." Plate-making is in his blood.

It is for such lads as this the company watches, knowing well enough that its future depends upon the opening and encouragement it can give to those who naturally turn to any one of its operations. Vandergrift is proud and jealous of its boys and girls. Their school records are watched as speculators watch the markets. Those who go to college are looked upon to honour the town, and some of them do it.

When Vandergrift was taken over by Big Busi-

ness, there was a fear in many a heart that its days of independence were over. "It was like a funeral," a man who had been in the place from the start told me. "We didn't know what would happen to us."

What they really feared they perhaps could not have told. It was the word "monopoly." As time has gone on and they have seen that the Steel Corporation was not only preserving Mr. McMurry's work and ideals but introducing some good ideas of its own, the confidence they gave him has gradually been transferred to it.

It is not humanly possible that a community should go through the experience that Vandergrift has in the last twenty years — the enthusiasm of its founding and its success, the disappointment and dread of amalgamation, the struggle over unionism — without scars. The important thing is that it has preserved its integrity and that it believes in its own future.

While Vandergrift seems to me the most important industrial town in America because of the sound principles on which it was originally planned and because of the labour struggles it has weathered, there are various other successful towns of experience. The National Housing Association has in its files full reports of these ventures, and it is working patiently and intelligently to spread its knowledge and its opinions in the places where they are most needed.

Of recent undertakings there is no doubt but that

Indian Hill, founded by the Norton Company of Worcester, Massachusetts, is the most suggestive and promising. It is planned for utility, economy and beauty. It will be the most attractive town of its kind in the United States if it is carried out as begun. One feature which is particularly valuable is the arrangement for taking care of boarders, houses in which a family has its own private quarters but which can serve men in a dining-room of their own and furnish rooms entirely cut off from the family. In the interests of privacy, decency and dignity this kind of building should be encouraged in every industrial centre.

The Norton Company has an original plan of financing Indian Hill. It requires from the purchaser an initial payment of ten per cent. of the purchase price. For the balance he gives two notes, one for \$1000 payable in twelve years at 5 per cent., and another for the balance payable on demand with interest at 5 per cent., both notes being secured by a purchase money mortgage to the company.

The purchaser gives also a supplementary agreement to the effect that he will purchase five shares in the co-operative bank conducted by the company for some years, and will continue payments thereon until his deposits shall have matured in the sum of \$1000, which in local banks, at the prevailing rate of interest, takes place in about eleven years and ten months. This insures the payment of the twelve-year note according to its terms. The

theory of this arrangement is that it gives the purchaser a feeling of independence, inasmuch as he does not make periodical payments on the principal, and forces him to become acquainted with co-operative bank methods, with the possibility that he may become more thrifty and use the bank even when not required to do so.

In consideration of this agreement, the company agree not to make demand upon the demand note so long as the purchaser shall continue to make monthly payments of interest and monthly payments to the co-operative bank. They further agree that if the purchaser shall die or become incapacitated within twelve years — provided that at the time he shall not be over sixty years of age — they will accept the surrender value of his co-operative bank shares in full payment of the time note. The result of this agreement is that the purchaser may be assured that at the end of twelve years, or upon his prior death, a sufficient proportion of the purchase price will have been paid so that he or his estate will then own the property free of all incumbrances except a first mortgage for not over sixty per cent. of the value of the property, so that at his option or their own he may resort to a bank for a mortgage and be entirely independent of the company.

In the case of a few of the higher priced houses the carrying out of this arrangement does not reduce the purchase price to a point where a bank mortgage could be secured to take care of the balance, but such houses are sold to men of higher earn-

ing power who may be expected to make payments on the purchase price in excess of their obligations, which will enable them to be independent of the company at the end of twelve years.

Here is a form given by the company to a purchaser showing the actual operation of the plan:

Your total purchase price is.....	\$3,851.50
You have made a first payment of 10%.....	385.15
You are borrowing on mortgage the balance.....	3,466.35
The amount due in 12 years, secured by time note,	
is	1,000.00
The balance secured by demand note is.....	2,466.35
Your monthly interest during first 12 years will be	14.45
Your monthly payment to co-operative bank will be	5.00
Your total monthly payments during first 12 years	19.45
Your monthly interest payment after 12 years will be	10.30
Total loan...\$3,466.35	Demand loan.\$2,466.35
5% 173.32	5% 123.32
$\frac{1}{12}$ 14.45	$\frac{1}{12}$ 10.30

The purchase price represents the actual cost of the house and land without profit. The original purchase price of the entire area was divided by the number of feet in the tract to determine the base price per foot. To this was added a pro-rata proportion of the cost of improvements such as sewers, highways, sidewalks, engineering expense and architect's fees.

In the case illustrated the cost of the land was \$685 for a lot containing 6850 square feet. To this figure was added the actual price of the house,

without profit. This included the expense of the building, heating, lighting, plumbing, piping, hardware, fixtures, papering, window shades, screens, concrete cellar floor, granolithic walks, rough grading, finish grading, planting and clothes reel.

The difficulty with such towns as Vandergrift and Indian Hill, and indeed most of our industrial centres, is that they meet the needs of only the highly paid workmen. Gary, Indiana, for instance, much as it has done, has flatly failed to provide for the unskilled labourers, of which it has great numbers. The result there has been the deplorable "Patch." What Gary and all of these towns need is houses that will rent for from \$12 to \$15 a month, that is, be within the reach of the \$2 a day man.

The difficulty in providing such houses is that we have not yet standardised building materials and building plans. Practically everything else that men and women need has been so standardised that a solid, good-looking article is available, at a standard price. The workman is not obliged to have his shoes, his coat, his shirts or his automobile made to order. When it comes to building a house for him, or when he comes to build a house, he has the expense of the custom-made thing.

One of the gravest problems of those interested in housing has long been how to overcome this extravagance, to secure standard materials which could be used in making standard houses; not that the houses should all look alike, but the core and essentials would be the same, differing only in details.

This important problem has been practically solved, by one of the younger architects of New York, Mr. Grosvenor Atterbury to whom we owe the intelligent planning of Indian Hill. For at least ten years Mr. Atterbury has been experimenting in economic concrete construction, his aim being to work out building sections of such form and size that a house could be assembled like a machine. That this is possible Mr. Atterbury has proved beyond question in his experiments conducted at Forest Hills, Long Island, for the Russell Sage Foundation. The big, perfectly-fitted blocks he makes are put into place as simply and easily as a child builds a house with blocks; and when they are together, they are there to stay. It is an absolutely dry, fire-proof permanent structure. The houses, as so far planned, show not only ingenuity in arrangement, but admirable taste in treatment. Mr. Atterbury has worked out a variety of treatment of surfaces and many interesting and appropriate details by which the houses can be made individual and attractive. The results of his long, devoted, even loving experiments do more toward solving what we call the housing problem than anything else of which I know. What Mr. Atterbury has done is best told in a letter from which I am allowed to quote:

As a result of a good many years' study of the housing problem from various points of view, I am fully convinced that the crux of the problem is not in a sub-division of the land or in the field of economic administration and taxa-

tion, but in the cost of construction; and that to-day the poorer the man, the greater is the proportion of his income that goes into the construction cost, and the less is the real economy with which it is spent. It is a curious fact that scientific and co-operative principles have been practically applied to the production of almost every other item in the poor man's living account, but the second largest single one—that of his housing. His bread, his clothing and his watch are factory products, largely guaranteed—sometimes by government. His house is usually "custom-made," and bought at the mercy of a speculative builder, subject to his guarantee.

We have been working for the past six or eight years on the idea of standardised dwellings. What we are trying to produce is not only obvious economy in material structure, but also in skilled expert service—such as is available now only to the rich man in the building of his home. The scheme, of course, is to do for the labouring man's house what Ford has done for the automobile, with certain additional conceptions relative to educational, hygienic and esthetic purposes. We set out without any prejudice in favour of any system or material, but with a programme based on the theory of standardisation, replication, shop manufacture, elimination and combination of processes, the substitution of power and machinery for hand labour, and, by no means least, the mutual co-ordination of design and construction. While in one sense we have only scratched the surface of the problem, in another sense we have passed the experimental stage and I think are ready for commercial development. On the other hand, the opportunity would be largely neglected if such development were carried on for merely commercial reasons and purposes. While to be successful it must be commercial, and while I believe

it can be made to pay — not only as a benefit to the labouring man, but equally to the employers of labour who must from now on take serious consideration of the housing problem, it ought, for obvious reasons, to be conducted by some agency or group that would continue the study and development of its possibilities on a large scale and with the most skilled advice and expert services.

CHAPTER VII

A MAN'S HOURS

One note-worthy and heartening by-product of these various efforts to improve industrial conditions has been the backing they have given to the old struggle for a shorter day. Instead of taking attention from it, they have emphasised its importance. When safety, health and sobriety become the aim of management, everything which affects them is studied. The relation of the hours a man works to his efficiency and stability is receiving more and more attention from the new industrial management.

One may well ask as he watches the tide of men and women pour out at night if it is possible to do the work of the world and keep the workers healthy, and as contented as it is in men to be? Dropping out of account those who are not happy because they resent labour and want idleness — and there are such — what is the matter that men do not thrive under labour? Is there something needfully evil and killing in it? Is labour a curse? Those who think so know not the worker. There is no task of earth some do not find good. Those who talk of the mine, the mill, the factory as if they were inherently inhuman and horrible are those who never have

known the miner, the weaver, or the steel or iron worker.

In the first-aid room of a cotton factory a tale was once told me of an operative who had died after working in the place for thirty years or more. At the time she had gone to work for the firm the factory stood on the West Side of New York. The town had closed in on it, and in the 90's it was moved to New Jersey. With it went scores of the operatives and their families. But this one woman would not leave the city. Nor would she give up the factory. It was *her* factory! For twelve years she commuted. She was always on time, always the last to leave.

She wore out at last. The company tried to persuade her to move to a nearby hospital where she could be better cared for, but the hold of her little home was upon her. All that she would consent to was a weekly visit from the factory nurse, and that was because she wanted the daily news of her old associates. This woman loved her work, loved her loom, the whir of it, the smell and feel of things.

In a great manufacturing plant in the West a little old man was pointed out to me. "He is rich," they said. "A year ago he inherited two hundred thousand dollars; but he has rarely missed a day at his lathe since. Perhaps he is a little more cocky than he used to be, talks a little more, but we could not drive him from the shop. He loves his lathe, loves the place. He will stay here as long as he lives."

There are men who love the mines, and who go down into the bowels of the earth with something of the spirit that men go into battle. There is no labour so dangerous, so full of hardships, so marked by brutal conditions as that of the sailor; but who can detach a sailor from his ship? No matter what the labour, there are always those who go back to it from sheer homesickness — “Trade nostalgia.”

An outsider can understand this only by familiarising himself with labour and labourers. When one walks long enough through great shops where black machines rise on every hand, huge cranes move up and down, smoke, flame and showers of sparks fill the air, where the walls resound with clanging, hissing and hammering; when he watches the men moving steadily and naturally in this world of strange operations and mighty forces, he comes sooner or later to a sense of the dignity of the thing, its meaning and power.

He sees that this is an army, moving in orderly, ordered ways, where every man is dependent on every other man, and where the perfection of the final results is the care of all. And they know it. The spirit of the whole animates them. You get a sense of your own relative insignificance, their sheer usefulness. They make things men must have. It is like the worthiness one feels in farming.

This is as it should be, and what it is for many. Why, then is it not so for all of those who come to it with courageous minds and who accept reverently

the law that men must earn bread for themselves and for those who are dependent upon them? It is not the painful efforts, the dangers, or even the evil conditions which do most to make labour unendurable for those who are in normal condition. The one thing above all others that takes the heart out of it and leaves the worker without appetite or zest for its excitements and its meaning is the long day.

Men and women come in the morning to their tasks with a spring of fresh energy within them. Little by little during the hours of labour they empty that spring. When it is dry they must draw from forces which should be untouched. By some strange chemistry which no one understands too well, these intrusions on the physical forces which should be inviolate produce in the human system a true toxic condition — fatigue poison, auto-poison the scientists call it.

If this fatigue poison passes a point where the period of rest following is not equal to the task of throwing it off and filling afresh the spring of energy, the man goes back to his toil a little unfit; the longer he goes on the more unfit he becomes. Slowly the poison invades his system. The repairing forces — food, relaxation, pleasure and sleep — becomes less and less equal to the task. The man becomes more and more open to the attack of disease; less and less able to do his work; unfit to improve upon it; unable to grow. He is an unsafe man, too, one not to be trusted among machines or in dangerous places. The man has been poisoned

into unfitness by the slow accumulation of fatigue poison which he could not throw off.

It was not work which did this. It was too much work. He needed the work to keep him fit. Without it or its equivalent, a regular physical exercise, his spring of energy would have as surely deteriorated as it did from overwork. The spring of energy standing idle would have soured within him.

It has taken years of observation and experiment to establish with anything like scientific accuracy the baneful effects on the labourer and his product of the too long day. This has been done finally with a completeness which even the courts are recognising. Moreover, in establishing these facts there have been discoveries made of the effects of the shorter day which have been as heartening as they have been surprising. They are discoveries which upset all the old theories about hours.

Briefly put they amount to this: An eight-hour day in a properly managed shop yields as large a quantity of work as a ten-hour day, and cuts out almost entirely certain irritations and interruptions which always have characterised the longer work period. As for labour, it has become an axiom in its circle that "shortening the day increases the pay." There is many a manufacturer that will tell you that shortening the day increases the profits..

Many are the influences which have led to the experiments with the shorter days. Most frequently it has undoubtedly been the plea and pressure of labour, organised and unorganised. Take the ex-

perience of the granite cutters of the United States: since 1820 they have been steadily at the problem of securing shorter hours for their trade, and always their claim has been that they could do as much and better work in shorter hours.

Experience has proved they were right. The first cut was from twelve to ten, and the output was not reduced. In 1890 the ten hours were reduced to nine, and again the output was not reduced. In 1900 the granite cutters secured an eight-hour day for the entire trade. James Duncan, the president of the association, claims, with every show of being right, that the members of the association are doing excellent work and as much of it as when they were working nine and ten hours. "They are working steadier," he says, "and Blue Monday is now unknown in our trade. They are more attentive, more in earnest."

The effect on the lives of the men, Mr. Duncan claims has been almost everywhere marked:

They seek new entertainment, they are in evidence in drawing and modelling schools in the evenings of the winter season, and conspicuous in athletics in summer. Some of our members have developed into great baseball stars in the major leagues. Boating, swimming, long rural walks, bicycle riding, and occasionally a week of vacation are in evidence. Homes are happier and our members and those dependent upon them and associated with them are better fed, and better clad than at any time in our trade history.

Mr. Duncan claims that the granite cutters give a full eight hours, that is, they do not arrive at 8, and

take the first half hour to get into their working clothes and gather up their tools, nor do they stop at a quarter or half an hour before closing time to get ready to leave. "Our constitutional regulations and the terms of our agreement," he writes, "provide and require that our members work eight hours five days of the week and four hours on Saturday. Employers invariably require our members to work 'from whistle to whistle!' There are no complaints or contentions upon that subject, as our members recognise the necessity of being at their work promptly at the time the whistle blows, and they equally remain at work until the same whistle announces the quitting hour.

"I am of the opinion that where there is slackness in respecting the starting and quitting hour it is because that shortcoming has been worked into the practice through carelessness both on the part of the worker and the employer, and if nipped in the bud, as the saying goes, would not have occurred."

As for the employers, I know of one who has been long in the granite business who has been so impressed with the benefits of an eight-hour day that he has been experimenting with seven hours! This employer, William J. Cranford of Buffalo, New York, put his theory and experience with hours into a letter voluntarily written to Mr. Duncan in 1912 and published later in *The Granite Cutters' Journal*. In this letter he says:

There are few firms in the country who have kept a comprehensive cost system extending over a period of more than thirty years. Just thirty-two years ago in January, 1880, we commenced to keep this record of the value of each man and the exact cost of each piece of work, and we have kept this ever since. In the part of this work which will interest you we have a page for each granite cutter, and following each entry of the piece of work he takes up is the day and hour commenced, the day and hour finished, the entire time consumed, the wages we have paid, the quarry bill, and a column for loss and a column for gain. In this way we are able to raise a man's wages from time to time as he proves his worth. We do this without request from the men, and in this way we obtain the highest efficiency, and we cannot remember when a man asked us to raise his wages.

This cost system extends back to the time when the day was ten hours, and it shows that the same man under identically the same conditions, accomplished more, of exactly the same kind of work when he was working nine hours, than he did when he was working ten hours, and again when the hours were reduced to eight hours this same man accomplished still more in an eight hour day than he did in a nine hour day, or a considerable amount more than he did when the day was ten hours long.

My observation of the conditions, and I am with our men from 8 A. M. until 5 P. M., is this, that as men work to-day at the granite cutting trade, an eight hour day is too long, and I believe that any good granite cutter (and I mean by this a man who uses his brains as well as his muscles every minute) could do just as much work in seven or even six hours as he does in eight. This may sound radical, but from close study I find that sixteen hours for "rest and

"refreshment" to a granite cutter is not sufficient to make him approach his work in the morning in a perfectly rested condition.

We are glad to watch the efforts of a Matthewson, Johnson, Joe Wood or any of the other star pitchers, and we would think McGraw, Griffith or Stahl beside themselves to put any one of these men in the box for two consecutive days, of about two hours each day. Now what granite cutter does not put as much of his brains and muscles into his work every day as these stars exercise? The shrewd manager knows he can get the best results from a man whose brain and body are not fatigued. We employers of granite cutters can learn a lesson from them. Once in a while there is an Edison who can work long hours profitably; but they are conspicuous by their rarity. The short life of the granite cutters is due not to the dust alone, but to the hard work incident to the trade.

Again, what are the hours of the men whose salaries soar into the five figure mark? Few, if any, are at their office more than four hours each day.

Let the union and the employers get together on this question. I am going to try this experiment on one man in the near future. I am going to tell him that I have his record for the past year, we will say, at eight hours, and I am going to pay him the same wages for a month or six weeks, and wish him to commence at 8:30 instead of 8:00, and quit at 4:30 instead of 5:00, and I do not wish him to exert himself one whit more than before, and I will give you the record of the result.

Six months later Mr. Crawford wrote Mr. Duncan:

I must write to tell you about the result of the experiment of the seven-hour day.

The man who worked for six weeks, seven hours a day, for eight hours' pay, accomplished more than he had ever done before. An increase of from three to twelve per cent., according to the kind of work he was cutting. This he says he did without expending any more effort than when working eight hours, so this proves, to my satisfaction, at least, the contention I made in my letter of December last, namely, that any good granite cutter could do more in seven than in eight hours.

It should be said for those who claim that the public pays for the shorter day in increased cost of product, that it has not proved so in the case of granite cutting. That is, the finished product has not increased in price to the consumer. Improved tools and methods have had something to do with this, to be sure. That is, it has not always been due to increased labour efficiency.

The experiments with shorter hours have by no means always been made under the pressure of the trade unions. Frequently they have been initiated by employers who suspected that long hours meant higher labour cost.

It was this theory that as long ago as 1890 led to an experiment in hours in the plant which later became the centre of the interesting industrial town of Vandergrift. George G. McMurtry, the president and head of the concern, was running the plant on a ten-hour day, and watching his men. He became convinced finally that, as he puts it, they "pumped

themselves out in eight hours." Any labour done beyond that time he believed was done at the risk of accident and of spoiled product. Moreover, men working ten hours a day could not use the machinery at its full capacity. He therefore introduced the eight-hour shift in a large percentage of his operations. The result was entirely satisfactory. He saved his men. They had time to recuperate and came back able to keep their machines up to their work, that is, in eight hours they actually made the machines do what they could not make them do in ten! They worked to the tune of "'Yankee Doodle,' Mr. McMurtry says, "not to that of 'Old Hundred.'"

At the same time, and entirely for economic reasons, Mr. McMurtry put an end to Sunday work in his plant. It didn't pay. "Sunday work is the most expensive work there is, for entirely human reasons. The men do what you and I would do. They 'nurse soft jobs' for Sunday. Moreover, as superintendents and foremen go to church on Sunday as a rule or at least are 'off,' there is much less supervision. Work is not in the air. The men stay and are paid, but they never work as on other days." It was this sensible observation which put an end to the Sunday labour in Mr. McMurtry's plant.

A class of steel and iron workers, which even enlightened and experimenting employers like Mr. McMurtry have generally contended could not, without too great loss, be subjected to an eight-hour rule, is that of the furnace men in steel and iron foundries

and mills. This argument is based on the irregular character of their labour — twenty to thirty minutes of intense, exhausting effort alternating with equal rest periods. That they do not work over six hours out of a twelve-hours shift is probably true. "Hence," argue the employers, "we cannot afford a shorter shift." It is this contention which is preserving twelve-hour work to-day in the Steel Corporation.

There is at least one independent steel plant in the country which has proved that the eight-hour shift for furnace and boiler men actually pays. This is the Commonwealth Steel Plant of Granite City, Illinois, the plant whose president, Mr. Clarence Howard, openly declares that the Golden Rule is the only infallible business guide we possess.

Several years ago the Commonwealth Steel Company decided that the twelve-hour day was not according to the Golden Rule. They were convinced, too, that the changes could be so made that the business would not suffer — that it might even gain. The snag on which the eight-hour shift has generally hung has been the earnings of the men. They could not, it was believed, earn in eight hours what they had in twelve. Consequently they objected to the shorter shift. This has been one difficulty with abolishing Sunday work in the steel industry. When the Steel Corporation cut out Sunday work, several thousand men left, seeking places where they would have employment seven days in the week. They wanted the money more than the leisure.

The Commonwealth, then, made a careful readjustment of wages, even the door boy being included. The increase ran from 16 per cent. to 22 per cent. an hour. No hint of what was planning was given the crews until the scheme had been matured. It came to them as a gift of the gods. Mr. R. A. Bull of the company, who in 1912 gave a full account of the experiment to the American Foundrymen's Association, said that there was no talk of increased efficiency, no string to the change. Automatically, efficiency did increase. An accurate and scientific record of the output in the last months before and the first months after the twelve-hour shift was turned to one of eight hours, was presented to the association by Mr. Bull. The difference in every important feature was in favour of the shorter shift. It was more economical, in spite of the increased wage, and the quality of the output was improved.

There is no one in the Commonwealth Steel Company to-day that will listen a moment to the argument that the "long day," the "tired hour" pays. "It can't pay," they'll tell you. It is contrary to the Golden Rule!

It has not always been the relation between the "tired hour" and the product that has brought an employer to a shorter day. Here is a case in an inland factory employing some five hundred or six hundred girls making small cotton articles; it suggests influences which are constantly at work modifying relations and conditions in factories: the owner, who was the manager, and all his "fore-

ladies" and foremen, as well as scores of the "girls," had been working together for possibly twenty years. There was a great degree of intimacy among them. All of the old-timers called the owner "Pete," and discussed shop matters with him on terms of entire equality and mutual interest.

For years Pete's day was that of the operatives, from 7 A. M. to 6 P. M., ten hours and no Saturday half-holiday. Then he became interested in baseball, and bought an automobile. But when you work from 7 A. M. to 6 P. M. there is scant time for either games or driving. Pete tried to bring himself boldly to going off Saturday afternoons, and to leaving early when the notion took him. *He couldn't do it and be easy in his mind!* Moreover, if he did it, he heard of it. "Fine to be the boss, ain't it?" some operative who had begun at the beginning and shared ups and downs with steadfast pluck and sympathy would call when she next saw him!

Finally Pete announced there was to be a Saturday half-holiday. They were to make up for it in part. By coming at 6:30 they could get in three hours, and he thought the business could stand a cut of two hours. So they started that scale; but the girls didn't like the earlier hours. They were very often late. Pete didn't complain, he did not like 6:30 himself; and in six months' time, without any discussion of the matter, everybody was coming in at 7 A. M., and everybody had his Saturday half-

holiday, which they will continue to have, as the law has recently sanctioned 55 hours in that State.

I asked the forewoman who told me the tale, a loyal and humorous person, "How about the output? Did it fall off?" "That's the queer thing," she said; "there are girls on piece work who make more, and the shop does more."

The greatest triumphs in handling hours have not come in trades where, as in cutting granite, making plates and weaving cotton, the demand is fairly steady. It has come in seasonal trades — those exasperating and difficult situations created by having to handle in six weeks two months, four months, all the work there is in that particular occupation, or a load ten or twenty or more times as great as during the major part of the year. These triumphs are almost entirely triumphs of management, the application of trained brains and determined wills to problems which industry has usually declared insoluble.

Take the canning of fruit and vegetables: we have been hearing for several years of the heathenish hours and conditions under which it is done, but we have heard very little about how it was to be improved. Out in Wisconsin, the industrial commission decided in 1912 to do something more practical than order the canneries to reform; they decided to help them work out a plan which even they would consider practical.

It is peas which are chiefly canned in the State; and the pea crop refuses to ripen regularly, much to the

disappointment of the good people who make laws for canneries in defiance of the facts of nature and men! The crops in Wisconsin are put in, usually, in four plantings, two weeks apart. If they ripened in the same ratio, labour for the canning could be arranged for with something like exactness, that is, the crop could be handled with little extra daily work. But ripening depends on the weather, and who can tell what the weather is to be? In 1912 the four plantings in the State ripened within ten days. In 1913 it extended over six weeks. Moreover, the crop acts differently in the northern part of the State, where the soil is sandy and warm, from what it does in the south, where the soil is clay; again, in the northern part of the State labour is scarce, as the population is sparse; in the south it is abundant, as the population is dense.

Here is a nice little problem which heretofore had been met by a non-workable law that no canner should use his help over fifty-five hours a week and nine hours a day. Neither labourers or canners knew how to meet this order — and did not try.

At the suggestion of the commission a committee, consisting of the pea canners and representatives of the public and the labour employed, came together before the season of 1913 and agreed that during the six weeks' canning season employés could work women 12 hours a day for 15 days of the six weeks; but in no week could they work them over 55 hours. For every hour beyond 10 in any day they were to receive double pay.

Out of 75 canners in the State all but 15 lived up to the programme. The 15 violators were prosecuted by the commission and fined. They were bitterly aggrieved at first, but in December, when the annual state canners' meeting was held in Milwaukee, they found their 60 colleagues who had obeyed the law had no sympathy for them. They contended that a workable law had been devised, and that any failure to obey it *deserved* punishment.

What has been done then, in Wisconsin, is to find a way to handle in a fairly orderly and efficient fashion a piece of seasonal labour of a particularly uncertain kind.

Almost as difficult a problem in hours as that of canning is the subscription season in the publishing world, those months of the late fall and early winter when periodicals are receiving orders for the year. Beginning in November and continuing into January and February a firm will receive thousands of orders a day. A peak load of possibly 7,000 a week in July becomes 75,000 a week in November. In most publishing offices this season of renewal has always been one of rush, confusion and long hours of overtime. New girls, to open, sort, and enter the orders, are brought in daily as the mail piles up. They receive their training as they work, with resulting annoyance to subscribers from mistakes in addresses and delayed magazines, and with terrible wear and tear on the office and with aggravating extra expense.

Two years ago an attempt was made by the Cro-

well Publishing Company to apply scientific management to this period of misery. By such a forecast as is possible from intelligent study of any business the probable orders for each week in the year were compiled; as the season approached and conditions were more apparent a daily forecast was made. Those in charge of the department knew in advance, with an accuracy which surprised everybody, as it turned out, what load they must carry.

They did not wait, as before, until their desks were buried with a day's orders, to pick up any untrained girl they could lay hands on. They engaged girls in advance and thus were able to choose and train. There were other things done; that most important and so often overlooked matter, the proper routing of work, was fixed, a more scientific adjustment of wages was made.

The results surprised every one connected with the establishment. There is now practically no night work, though under the old system the day was regularly from 7:30 A.M. to 9 P.M. from November to February. Earnings have increased from 25 to 33 per cent. in all clerical departments. The working conditions have been greatly improved. Complaints were reduced 30 per cent. in the first season. The cost of handling subscriptions has been reduced 30 per cent., though that is considered less important than the good will which a prompt service earns from subscribers.

That is, here is an experiment which proves that one of the most wearing and painful periods of over-

work with which the country is familiar, and one which has been tolerated as unavoidable, can be overcome by the application of the principles of scientific management — not only are its troubles ironed out, but the workers earn more money and the concern saves!

One of the completest victories over irregular and long hours of which I know is that of the Pilgrim Laundry of Brooklyn, New York. It is a triumph of sound progressive management combined with an unusual understanding of and respect for the part the human equation plays in industrial undertakings.

The first thing that piqued my curiosity about this plant was its hours of $46\frac{1}{2}$ a week, and, what was as important to my mind, they were regular. In all the recent upheavals over laundries the cruelly long hours crowded into a few days of the week have been the most disturbing feature — 11, 13, even 17, were reported.

Just before the close of Congress in February, 1912, the House Committee on Labour gave a series of hearings on limiting the hours of labour of women in the District of Columbia to eight a day. The committee was snowed under by protests. Even a worker brought in as a witness told the puzzled congressmen that "while that eight-hour system is very nice, I don't see where laundry work can be accomplished and gotten out in that time, to save my life." The public was to blame. It would not change its linen until Sunday. The collection of bundles could not be started until Monday morning,

and they must all be returned by Saturday night. Thus there were only four days in the week for work. This explanation has generally floored the best-intentioned. Even a radical law-maker hesitates to legislate about the time the public shall change its shirt.

The founders of the Pilgrim Laundry have never accepted the idea that because hard and exasperating conditions prevail in their industry they were inevitable. Ever since they began, twenty years ago, they have worked steadily to overcome those features of the business which have made it difficult to build up a stable and contented force. Although their first establishment was crowded they determined to have no eating of lunches on the ironing boards.

By providing folding tables and chairs to be kept under the tables in the working hours, and by marking on the floor the spot where each was to be set, the girls ate their lunch in a decent fashion — and this, remember, was twenty years ago. About this time they started a rest period at nine o'clock with coffee and crackers. These were simply indications of the way they tried to make the shop work less disagreeable.

From the beginning they attacked the hours. Calling together the girls on the floor they would seek their co-operation in putting through new schemes devised for handling the clothes in shorter time.

Several years ago they succeeded in greatly reduc-

ing the overtime prevalent in the business, and for several years have closed regularly at 5:30. And what were these efforts worth? Their plant grew steadily until they were employing one hundred and fifty men and women. But they did not realise what they had achieved until suddenly everything was burned to ashes. Then it was that those who had watched their efforts rallied to them with money and credit, and, better still, then it was that those who had worked with them came to them and said, "We will do anything we can to help save the Pilgrim."

And they worked nights for seven weeks in other plants and with the co-operation of the salesmen held the business together. Out of the force of one hundred and twenty-five girls working in the Pilgrim laundry when it was burned in 1906, only five did not report for work when two months later the management was ready to reopen their temporary plant.

Five years later, taking nearly a square on what was then the outskirts of Brooklyn, they put up a building which is an admirable example of the adaptation of a thing to its purpose. From without, it seems a structure largely of glass set in a frame of red brick and pale green ironwork. Within, it is a thing of glass and white paint. Strength, sanitation, air, light, proof against fire — these seem to have been the main ideas in designing the building. The result is a structure which in certain fundamentals to good health goes as far as any public build-

ing — theatre, church, office, shop — that I personally have seen.

When the plant was finished it was equipped with all that complicated machinery which has been substituted in all large laundries in the last twenty years for the primitive utensils of tub, washboard, boiler and flatiron.

The new building when finished and equipped was an inspiration alike to firm and employés.

"We must do something worthy of all this," they all felt. "We must live up to this building, not only in the quality of the work we put out, but, what is more important, in the kind of relations that we develop with the people who, if this plant is to be successful, must make it so."

The results of their efforts, applied as they have been to already efficient methods and to a group accustomed to try experiments, have been a revelation in what can be done if men are willing to try.

The hard problem of hours has been solved. Take the public's reluctance to giving out laundry on any day but Monday. The Pilgrim Laundry has overcome that by *educating its public* to have a portion of its linen ready for collection on Thursday, Friday and Saturday. The result is that work can begin in the laundry bright and early Monday morning.

By what persuasive arguments and long patience they succeeded in educating four thousand customers to this revolutionary practice, I do not know. That

they sent out such notices as that here printed¹ is certain; that their salesmen, with all the enthusiasm

PILGRIM STEAM LAUNDRY CO.

633 Seventeenth St.

Borough of Brooklyn, N. Y.

**IMPORTANT!
CHANGE OF CALLING DAY**

The irregular working hours of laundry help are caused, mainly, by two conditions: first, by reason of the present method of collection and delivery of work, and, second, on account of the large fluctuation between the amount of laundry received from regular customers during different weeks and seasons.

By commencing collecting soiled linen on Monday and finishing delivery on Saturday, there are intervals at the beginning and end of each week when the workers in the laundry have nothing to do, and without working overtime—a fair number of hours' work per week cannot be accomplished.

A plan has been tried in several cities whereby part of the work, now collected the first three days of the week, is taken the last three days, and delivered the first three days of the next week.

This plan enables the management to operate their works a definite number of hours per day, thus doing away with the worst abuse in the industry, i. e., irregular hours.

To you it insures your work being done under uniform conditions, as the hurry and push at certain seasons make for an inferior product.

It also insures a more uniform time of delivery.

As the longer wait than usual may inconvenience you the first week, we will gladly accept half your work on the usual call day and the other half on the new call day.

At first thought this plan may not meet with your approval; we urge you, however, to give it a fair trial, believing you will find it no more troublesome than the present plan. We also urge you in behalf of our entire working force to accept it, as years of study to better conditions have not made possible such an ideal as will be attained by putting in effect this change.

If there are any details on which you wish further information, please send us the enclosed card.

Yours respectfully,

THE PILGRIM STEAM LAUNDRY CO.

of youth, harangued their customers that they had a duty in this matter, and that it was altogether inconsistent for them to denounce at their clubs the wickedness of laundrymen if they were not willing to take the extra trouble of changing their day for delivering their clothes, is certain.

The point is that they educated the women, and that to-day the Pilgrim Laundry gathers and delivers its work every day of the week. Each customer knows not only the day, but the exact hour at which the waggon will call for her clothes. She has been made to understand the importance in a big co-operative undertaking of being exact. She has been made to see that if she is late, she makes the boy late on his rounds, and that she puts back the machinery of two hundred and fifty or more working people. That is, the Pilgrim Laundry has educated a slice of the Brooklyn populace to what co-operative effort really means.

But something more is needed than getting in the clothes regularly. The lack of all method in handling the clothes in the old-fashioned laundry has always been a particularly depressing feature to an intelligent person. It was all very well to say that the work ought to be handled in so many hours and the girls allowed to go home promptly at 5:30 or 6, or whatever the time might be; but what are you to do if the customers' work is unfinished, due to an excessively heavy week, or a holiday?

If deliveries are not promptly made, there are no more customers; and if there are no more customers,

there is no work; if there is no work, there is no bread and, hard and wretched as it all is, it was not enough to say this must not be. The important thing was to show how it could be avoided. No commissioner or investigator could show that, for the very simple reason that he did not know anything about the business. All he could do was to check up hours and say this or that operation was killing.

System, co-operation, continual experimenting had done much to regulate the work of the Pilgrim Laundry; but its managers were not satisfied that more could not be done.

Carefully and tentatively, principle after principle of scientific management was tried out. The work was planned and routed. Each separate operation was studied until the best and easiest and quickest method was found. Girls were instructed in — not left to pick up — the proper use of machines. The kind of work each particular girl could do best was discovered. The wage scale was revolutionised. Divided into classes as the force was, according to the kind of linen each handled, each class had its representative on the factory committee, which met regularly with the overseers' committee to discuss the problem of the work, that is, the floor was kept in touch with the management through representatives of its own members, and through talks by the management once every week.

The result of all this has been brilliant. One of them is the splendid triumph of reducing the hours to $46\frac{1}{2}$ a week. With this reduction and regula-

tion of hours has come a wage scale unheard of in laundries. Mangle work, which a few years ago was paid but three or four dollars a week and which had been advanced in this plant by April, 1912, to an average of \$6.97 a week, is now paid an average of \$8.90 a week, and mangle work is the cheapest in the factory.

In the four months from August 1 to December 1, 1914, the average wage per capita was $6\frac{3}{4}$ per cent. higher than for the corresponding months of 1913, regardless of the fact that the laundry business felt in a measure the same depression as other businesses during those four months.

At the same time the rest periods of five minutes every hour and a half, distributed through the day, have reduced to eight hours and ten minutes per day the actual working hours of the girls.

The rest periods have not lessened the quantity of work produced per day. The departments where these rest periods have been established for several months show a gain in physical condition which results in fewer absences and, consequently, greater efficiency. The pleasant lunch-room, the recreations planned by the fine woman who handles the so-called service work of the place, the constant care of health, have improved the girls so that the time lost from illness has been reduced to a degree which the management had not even dared to hope.

One of the most conclusive proofs that labour appreciates and approves a management is the reduction of the number of those who leave or are dis-

charged. In 1911, 379 left the Pilgrim Laundry, 78 were discharged, 3 were married, out of a regular force of 175 employés. In 1912, 161 left, 109 were discharged, and 7 married. In 1913, 121 left, 51 were discharged, and 10 were married, out of 260 employés. In the period since scientific management was undertaken there has been an increase of 20 per cent. in business with an inappreciable increase of help. In the period of business depression of 1914 there was a falling off of business in laundries in nearly if not all our cities of from 10 to 25 per cent. Yet in this period the Pilgrim Laundry gained 6 1-3 per cent.

It is but another proof that where brains, determination, patience and a sense of human relations are applied to business management the problem of long hours can be solved. The short day is part of good management. The highest efficiency is as incompatible with a long day as it is with bad ventilation, poor sanitation, low wages, or the failure to co-operate. This judgment is not based merely on the few cases quoted here. They are but illustrations drawn from a great body of similar experiences.

Wherever a careful application of scientific management has been made in shop or factory, the tendency is to reduce hours. Organised labour denies this. Among the trade union objections to the system which have been presented to Congress is the statement that it tends to lengthen the hours of labour. This statement has even gone in with the

approval of the American Federation of Labour. There is no factory of which I know where this is true. Sanford E. Thompson, who is certainly one of the most experienced men in the Taylor group, declares that he has seen frequent reduction of hours in the plants with which he is familiar, and he believed it inevitable in all shops which are on a long day. Practically every engineer that I have known interested in scientific management gives as one of his arguments for it that it tends to shorter hours of labour. At the hearings on the subject held before the Congressional Committee of Labour in April, 1916, several employers and managers testified that their experience has been that the short day followed the introduction of the system. Mr. Noyes, the General Superintendent of the German-American Button Company of Rochester, New York, told the committee that before the introduction of scientific management into his factory the hours were 59 to 60 per week, that the actual work hours now are 51 1-3.

At the same hearings Mr. Feiss of the Clothcraft Shop of Cleveland said that the average working time for the great majority of the people of his factory was 45 hours a week, that is about $7\frac{1}{2}$ hours a day. Mr. Feiss told the committee that he believed that the working hours in every industry should be limited to those hours, whatever they happen to be, beyond which human energy will flag and tire.

Mr. C. J. Morrison, a New York consulting engineer, of the firm of Meyer, Morrison & Company,

has had a large experience in putting factories on three shifts of eight hours each, and always with the result that the shorter shift was more profitable than the longer had been. He points out carefully that simply changing a plant from ten hours to eight and operating under rule-of-thumb methods will only increase costs; but if on the other hand, the work is properly planned and despatched, so that each worker has a job and the necessary tools for performing it, costs will go down. In one printing plant which was handling a kind of work in which the competition is especially keen, Mr. Morrison spent a good many months stopping leaks, solving problems of power, light, heat, humidity, handling materials, etc. Finally he believed that the eight-hour day could be made profitable. It was accordingly established and immediately the result that he had anticipated was realised, that is, the costs were materially reduced and profits increased.

Mr. Morrison is a firm believer in three eight-hour shifts and offers very interesting figures to show how large a decrease in operating expenses and increase in profits comes from using a plant twenty-four hours out of the day instead of ten, twelve or sixteen. In one of his pieces of work he found that the burden of cost for the eight-hour shift was \$162,200, for the two shifts \$214,200 and for the three shifts \$250,400. As a result of this change from one to three shifts the burden per pound was changed from about $5\frac{1}{2}$ cents to about $2\frac{3}{4}$.

What has happened in this fight against the long day is most significant — a hint of what we may expect from every effort to make the conditions of men and women more just and more tolerable. It was attacked because of its inhumanity. It drained the forces of men and women beyond repair. It made them old before their time. It visited its curse on their children. It turned the blessing of labour to an unendurable burden, and streaked human progress with lines of such woe and injustice that men and women came to question civilisation itself.

And yet men clung to it. In no other way, they declared, could we get the world's work done. It was not only the mill hand, the shop girl, the domestic, the miner who kept a long day. The editor, the banker, and the teacher, accepted the theory that it was only by long hours that they were to succeed. It has been the habit of the country to make a virtue of sitting at its desk — whether its mind was there or not. "From sun to sun," was the worker's day — fewer hours proved him an idler, soil for the Devil! The surprise of the fight on the long day, of the experiments with the shorter one, has been not only that the business could stand it, but that the business thrived under it as surely as the man did. It is but another of the proofs which are heaping up in American industry to-day that whatever is good for men and women — contributes to their health, happiness, development — is good for business.

CHAPTER VIII

A MAN'S HIRE

When the day comes, as it must, that men shall have worked out tables fixing the relative value of the service each renders the world, present day income, wage and salary records will look as preposterous as French pre-revolutionary tax lists look to-day. The great mass of men and women give so much and get so little! "Unrequited toil" is piling up now as it has been through all the past, and one day it must be wiped out.

Those who suppose that only dealers in words and ideas think these things do not know our time. The producing world is hard after a fresh readjustment of values for services rendered. Scores of experiments are making in scores of different industries, weighings and computings of what miners and bankers, engineers and promoters, speech-makers and child-bearers, grass-growers and shop-keepers are worth.

In a report made four years ago to a national association of employers in one of our greatest and richest industries and signed by names standing in their different communities for ability and power is a paragraph headed "The Value of Labour." It opens: "Are our employés, individually or col-

lectively, receiving all the results of their labour to which they may be properly entitled?" and then follows a searching analysis of conditions and relations in the great industry the signers represent. Wages, the signers of this document consider only the starting point in the earnings of an industrious and faithful worker. They declare that they should be fully equal to those paid by other employers engaged in similar work, and that nothing in the suggestions they make for adding other returns should ever be made a pretext for lowering or tampering with them.

This is a big step, but in no way does it help us in settling whether or no the amount "paid by other employers engaged in similar work" is what it should be. This "basic wage" which is all that the labourers of the world have to live on as a rule has always been the resultant of many dire and ignorant forces operating on the law of supply and demand. If the industrial world was perfectly organised, if the road through it was open to all kinds of talent and we had an unfailing system for helping each to develop his best, if there was as great a passion in the world for efficiency and justice as for the "soft job" and "the lion's share," the law of supply and demand would undoubtedly work out a fairly just wage. As things now are that law is twisted and deformed by continually changing conditions which drive men to take what they can get, anything rather than starvation; by demand, imperious, changeful, unrestricted by contracts or principles, obsessed with the notion that cheap labour is profitable. Is it

strange that the fixing of wages has become practically a tug-of-war between those who direct industries and the labouring mass, whose only power lies in its ability to refuse to work — often at the price of semi-starvation? The senselessness, waste and injustice of fixing by such primitive methods the return which a man shall receive for real service has for years now troubled an increasing number of employers and led to various efforts to formulate theories both sound and practical for its control. "Co-operative bargaining," "the living wage," "the minimum wage," "compulsory arbitration," "the sliding scale," are theories which are influencing the opinion and practice of employers, and leading to observation and experiments more or less scientific. One if not the most important conclusion that large bodies of managers have drawn from the mass of experience with wages in the last twenty-five years is the unsoundness of the old dogma that a low wage is a profitable wage. So long as men believed that all increase in pay must come out of profits, that is, that the increase brought no increase in efficiency, they were bound to fight all changes. Labour has been brought up on the theory that its gains came out of the amount capital would otherwise receive. It was thus put into the position of an enemy of capital. Under this theory it had no alternative but war if it was to better its wage.

Scores of recent experiments have demonstrated the unsoundness of this view. The high wage under proper management, like the short day under proper

management, means increased output. Take as an illustration the work on the problem that was begun a quarter of a century ago by a certain Brooklyn drop-forging company. Thirty years ago this house was one of the smallest of its kind in the United States. The two men who owned it made up, with the men at the hammers, practically its entire force. They managed it; kept its books; sold its output. One of their subjects of friendly chaffing in those early days was that the junior partner worked at a desk which cost seven dollars while that of the senior partner cost but six dollars.

This senior partner at the six-dollar desk, James H. Williams by name, held as a principle of success a doctrine so in contradiction to that then held by most American manufacturers that even to have stated it would have brought down ridicule upon him. He put hope of success not alone, or chiefly, in himself or his partner, in his bank or his market, in tariff or rebates: it was the men who made a business successful he said. And they would do it if relations of mutual advantage, good will, justice and respect prevailed.

This being his belief, Mr. Williams set himself to carrying it out. He decided, in spite of the fact that he was running the smallest business of the kind in the country, to pay high wages. One of his chief concerns as the business grew was to see that the men were getting all that they earned. Again and again a man was called in and told that something had been added to his wages because he was

earning it. But the reverse was never true, that is, the pay was never cut below what was considered a day's wage.

But Mr. Williams was not satisfied with the operation of the fixed daily wages. He believed that it did not give the men a sufficient chance or the maximum incentive. Accordingly fifteen years ago he introduced wherever he could a system of piece work. It was at a time when this system was highly, and justly, unpopular; but Mr. Williams in introducing it made it an ironclad rule that the two practices which had made its bad repute should never be allowed in his shop. In the first place, the regular day's wage was guaranteed, whatever the man's output. In the second place, his piece work rate was never to be cut, whatever the conditions; if it was ten cents a piece, ten cents it should remain. "You may earn all you can and the more it is the better we shall like it."

The experiment was immediately successful. Earnings of workmen rose in some cases to six dollars or more a day, and at one period in two years the shop's output was doubled. There were certain other phases of this wage policy which Mr. Williams insisted on: for instance, if dull times came, as they always do come, the work went on, stock being made up in order to keep the men together. If this lasted longer than the resources of the firm could stand, half time was tried, and men were employed alternately so as to give each a fair chance.

Consider the heresy! It upset the dogma upon

which our whole wage system has been based, the dogma of the economy of cheap labour. You must pay labour as little as possible, since this is the only way to produce cheaply and it is to the interest of the people that things be cheap. There is also a moral reason for low wages. High wages give men more money to spend in drink and "idle amusement," and hence are a kind of social evil! in other words, *spoil* labour.

Mr. Williams's experiment with his creed proved that it did not *spoil* labour. To-day the little drop-forgé works of two hammers in 1882, and the smallest of the eight in the United States at that time, has eighty-seven, and is the largest of some twenty-eight or more in the country.

The average service period of the seven hundred men it employs is ten years. Fathers and their sons are in the shop and grandsons are expected. The present president of the company once worked at a forge. Moreover, it is a shop from which has been taken all fear of "soldiering." Every man is intent on keeping the shop's place at the head of the list. He gains by it. This practice solved for Mr. Williams one of the chief problems under which nearly all of his competitors laboured — that of the strike. In thirty years the firm has had but one strike, and that a revolt against an unpopular foreman; it was of but three days' duration.

Now these were discoveries, profitable discoveries, trade advantages. Mr. Williams spent his life in establishing them as beyond question in the minds

of his associates and men. That was his life work, and some eight years ago he died, leaving behind him, a factory which had grown from the smallest of its kind in the United States to the largest, and with a market which, once scarcely extending beyond Greater New York, literally embraces the world.

An honest achievement is always a fertile thing. It casts its seeds to the wind and one never knows where they will fall and sprout. Mr. Williams had a partner, he who sat at the seven-dollar desk. His name was William C. Redfield. Because of what he learned by watching his senior partner working out his industrial creed — because of his faith in it and his preaching of it Mr. Redfield is now United States Secretary of Commerce!

Mr. Redfield did not take the Williams creed as a matter of course. He could not, for his work in the firm was such as constantly to impress on his mind the wide difference between his factory and others. The goods made there, and which he spent much of his time putting on the market, were used by manufacturers. To sell them, visits to other factories were necessary. Not only did Mr. Redfield become familiar with factories in the United States, but he visited those of many countries. Trained to believe that the foundations of a business is its men, and that the relations with them — their conditions, wages, spirit — are all-important, those were the things he noted and compared. His observations and experiences in selling only strengthened his belief in Mr. Williams's wisdom. He came to feel

that principles had been established, which if accepted, would revolutionise American industry.

One of the first conclusions he came to as he travelled about the world on his business was that many, if not all, American manufacturers were making a terrible and costly mistake in believing that they were hampered in the world's markets by the cost of their labour. This came from a series of personal experiences in selling his own wares and in observing what other American firms were selling.

He found that he could make and deliver goods to competing English manufacturers at a price which would enable the Englishman to make a ten per cent. profit. He found that in Belgium, where wages were the lowest in Europe, he could fill orders satisfactorily to the buyers, in price and quality. He found that in Paris, where at one time he had had an office, the work of the French carpenter at \$1.90 a day was dearer than that of a Yankee at \$4.50.

He found that in Japan we could underbid native manufacturers of locomotives, although the American worker received wages three and a half times greater. He found standard American goods of a great variety sold in the markets of Europe and Asia in competition with goods produced by labour which was paid far less per day, at prices lower than they are here. He found American lead pencils in Central Java and shaving soap made in New Jersey in Hongkong.

How was this possible, if the theory that high wages are dear wages is true? It is not true — that

was Mr. Redfield's conclusion. He watched labour at work wherever he went, and everywhere it was forced upon him that the low wages of Europe and the East are costly and wasteful; that the man or woman who works for a sum which will barely feed and clothe and shelter him, who works without a certainty that as his efficiency increases his pay will increase in a just and definite ratio, who works without a consciousness of the sympathetic interest and co-operation of all those over him, that man or woman's output is the most costly in the labour world.

These were the conclusions that Mr. Redfield formed from experience. A few years ago he left the firm and entered public life for the purpose of preaching the gospel of what he calls the "New Industrial Day." His preaching led him to Congress, where for one term he fought for a reduction of the tariff. His contribution to the discussion of the "cost of production" in the Sixty-second Congress gave advocates of a high tariff one of the rudest jolts they have had in fifty years. Incidentally, too, they administered a tonic to the debates which was as effective as unexpected.

From Congress, Mr. Redfield went into Mr. Wilson's cabinet, where he is working on the stimulating theory that the essential element in industry, the element upon which progress chiefly depends, is the man. To neglect the man, in his judgment, is to starve the industry — take from it vitality, freshness and initiative. Unless men are considered first, he con-

tinually preaches, you cannot cut your cost of production. Consider them first, and there is practically no end to your progress.

Mr. Williams's success with high wages was not merely a triumph of theory. It was mainly a triumph of management. Inspired by a sound idea of the relation of men to the enterprise he directed, he gave close and personal attention to the conditions under which their work was done; he studied their needs as they laboured and he sought in every way to improve both the factory and the methods. Voluntarily he cut his hours to nine twenty-five years ago when practically the entire labour world was on a ten-hour day. He was one of the first employers in the country to provide baths for men and later to arrange that shop clothes should be washed on the premises. When enlarging his plant some fifteen years ago he left space for club rooms to be used when the men should ask for them, as later they did. Medals awarded for superior product were hung in the club rooms. "The men earned them," was Mr. Williams's reason for not exhibiting them in the offices.

Efficiency, in Mr. Williams' opinion, was the result of friendly co-operation in the effort to keep a business in the front rank. He was one of several legitimate forerunners of the new science of industrial management. This science which is doing much to revolutionise both the practices and the attitude of mind of employers who give it a patient and intelligent test, has effected no more radical changes

than those in wages. There is a popular notion that the increase is due merely to cunning devices in speeding up workers. The old superstition that the amount of work a man can do depends upon the hours you can keep him at his task and the strength of the lash with which you drive him has still so strong a hold on both labourers and employers that the first explanation for the increase of output under scientific management has been "a new form of drive."

This notion can only be overcome by carefully following an installation of the system by a competent engineer. As its name indicates, the new science concerns itself primarily with management. Its attack is on management, not merely management of labour but management of every element in the process of production. As a fact labour is not often touched until many months after the reform of management is begun.

I have already referred in Chapter I to the improvements in shop conveniences which is always one of the preliminary steps in bringing a shop under the system. Almost the first attack is on the tools, chairs, benches, and machines a worker uses. Are they fitted to him? Is a five-foot man using a shovel suitable only for a six-footer? Is a short girl sitting on a chair comfortable only for a tall one? Are heavy irons lifted when they might be shoved? The aim is to fit the worker's equipment to him as shoe or coat is, so that he can use it with the least possible friction and waste of energy.

What the worker is saved in wear and tear by these changes goes unconsciously into the quantity of his product. He does more because he works more freely and easily. Of course the worker himself has had nothing to do with this freeing of his power. It was one of his handicaps for which management alone was responsible and which management, grown wise, has removed.

Again, the systematic, orderly and time-saving handling of tools and supplies to which reference is made in Chapter I frees the worker from both annoyance and waste time. He can go ahead at once with work. He is not obliged to hunt for tools or wait for supplies. Here again his product suffered from the incompetency of management. He does more under the new system because the management is doing something which obviously was part of its business, but to which it had never given careful thought and direction.

Extraordinary gains for the worker come through scientific methods of planning and routing orders. Not only does an order flow through the shop according to a carefully arranged plan, but each step in the operation fits into the one preceding and the one following. A comparison of what happens to a job under the old hap-hazard system of dumping it into a shop and allowing it to work its way through, more or less by chance, with what happens under the new method of planning and routing reveals one great reason why an operative's output is increased.

The management is using its brains, and labour is reaping the advantage.

When these changes have been thoroughly worked out, that is, when equipment and supplies have been standardised and correct increases for planning and routing work installed, it is possible to turn attention to the worker. It is for attempting to set tasks for him before these things have been done that many of the worst failures in the system have come. The conditions under which he is working are changed. What was a fair day's work is no longer so, but what is a day's work? What ought an average man to do under the new system and new conditions? This is a legitimate question. But the new manager goes farther. He asks whether it is not possible to improve the worker's methods as well as his tools and his conditions. Is he doing his task in the easiest and quickest and most efficient way? He can only answer this as he answered the question as to whether or not the machinery of the shop was the best possible for the work it had to do — by study. As a rule this study of each particular task in a shop is carried on in the laboratory or experimental room, not on the factory floor. Where the machines are very large, as in the case of printing presses or paper machines, this practice is not possible, but the exceptions are few. A workman is selected for the experiments, and is told that if he will co-operate in their making, he will be given a bonus.

This study of a particular task is highly interest-

ing. It begins by separating the performance into the various motions of which it is composed, and by observing each of these motions to find whether or not it is necessary, and whether or no, if necessary, it is the simplest and therefore quickest motion possible. Almost invariably by this analysis it is found practical to eliminate motions, thus saving energy and time. Frequently it is discovered that much simpler motions than those used are equally effective. The only sure way of fixing which of several possible motions is simplest is by measuring the time each takes. This is done, of course, by means of a stopwatch.

When unnecessary motions are cut from the task, and the simplest way of performing those which are necessary found, the times fixed for each of these are added. A liberal allowance is then made for mechanical and temperamental delays and interference, and the result, called a "time-study," is set as the proper period in which the average worker should be able to do this particular piece of work. He is not expected to accomplish this without instruction. The time study itself is printed on an instruction card which is given the worker. He is taught its meaning and aided in carrying out its direction by an instructor who is one of the regular staff under the new system. The instructor's only function is teaching employés how to work properly, and in seeing that they understand and are following the time-studies. Frequently the instruction card directs the operative in case he finds that he is unable to make

the task in the time fixed to appeal at once for help, that is, it is not true, as sometimes claimed by those who do not understand the meaning of time studies and instruction cards, that the worker has no voice in the matter. He has, must have, or the system would fall to pieces.

Having fixed the time for each task, it is of course easy to fix how much work can be asked in a day, that is, it is not difficult to calculate what a day's work should be in amount. It is obvious, however, that there would be little hope of persuading a group of operatives to follow a method requiring so much more attention and precision in order to turn out the day's work, if they had no other incentive than learning to do a thing in a new and better way. Giving them an incentive in the form of an increased wage is and always has been an integral part of scientific management. This wage is paid in various ways. Mr. Taylor's plan, known as "task and bonus," is to pay a bonus if the task is reached, otherwise to pay the day's wage commonest for the kind of work in the vicinity. This plan naturally will not give satisfaction unless the task is fixed so that the average worker who really tries can make it without over fatigue. The success depends absolutely on his earning his premium. When he fails to do so, he naturally believes the task is set too high. The management which is as much interested as he in his earning the bonus is thus compelled to look into the time-study as well as into the worker's methods and to find the error, if there is one. Sanford C. Thomp-

son, who has had an experience of some twenty years with scientific management, declares that the system once installed works almost automatically, and that a very small proportion of operatives fail to make their bonus.

The bonus is usually fixed at about one-third of the day's wage or, in case of piece work, at about one-third of the piece rate. Organised labour charges that a systematic cutting of rates goes on under the system. This is entirely contrary to the spirit of the system and to the practice where I have observed it. Indeed it would be fatal in the long run.

At the hearings before the Industrial Commission in 1914, the late Mr. James Mapes Dodge, manager of the Link Belt Company of Philadelphia, a shop which has had a ten-years' experience with scientific management, introduced certain diaries kept by one of the workingmen. One of the commissioners examining the books called attention to an entry which read:

"I made bushels of money under this rate. Brown said I did not do it honestly, but I agreed to pay him twelve to five that I could still go ahead of that, but he got 'cold feet.' "

"When you found that he made bushels of money," the commissioner asked Mr. Dodge, "did you cut the rate?"

"No," said Mr. Dodge, "we would not dare to cut the rate. Scientific management would evaporate

like snow in sunshine if we did not keep our word with the men."

Henry B. Towne, the head of the Yale and Towne Manufacturing Company of Connecticut, said at the hearings before the Committee on Labour in the spring of 1916 that he had many new employés, both men and women, who would be expected under present conditions to earn \$2.25 to \$2.50 a day, who were earning under scientific management \$4 to \$5 or even as high as \$8 a day. These people were on piece work. The committee obviously suspected that these high wages would mean a cutting of the piece rate, a suspicion born of their entire misconception of the system. Mr. Towne said in answer to the question, "The rate per unit stands. They stand with one exception. If the rates are complained about, then we investigate most carefully. We see what other workers on the same job have to say about it; we review our experiments and tests and figures and if there is any error, it is corrected. Excepting that, the rates stand until there is some change in the job. If we introduce new machines or methods or change the article or product, then the rates must be reviewed."

Wherever the system has been properly installed, that is, where the principles and not merely the mechanism are followed, wages have promptly risen. In certain industries where the wages of women particularly have been notoriously low, the results have been most hopeful.

I confess that the first thing that has ever shed a ray of light into my mind on the cotton mill—aside from legislation which, after all, is only a war engine compelling men to do this or not to do that—has been scientific management.

At the very best, spinning and weaving are wearing processes. The difficulty of making them more tolerable has seemed to make employers the more obstinate about changes; they have often had fairly to be bludgeoned into proper ventilation, sanitation and hours, and as for wages, they have generally been below a decent standard of living for women and for men with families. I have referred to certain easements in the operations which scientific management has brought about in the one cotton mill which I have seen under the system.

Compare the "look" of the girls and women there, their manners, morals and health, with that of many, not all, of the Rhode Island or Massachusetts factories in which I have seen them, and the improvement is unbelievable. The better wages have something to do with this, of course; but the cheerful lunch-room, the sympathetic and intelligent nurse, the rest- and first-aid room, amusements and clubs, all aid.

A comparative study of the average wages and hours in cotton mills in different States with those in this mill is interesting. The hours are those legal in the State (55)—only one State has fewer, Massachusetts, where they are 54. The average hours for the country are 57.

One of the first differences the table shows, and an important one, is that the wages of men and women doing the same work are equal. It must be, if a standard has been set. The wage follows this standard and sex has nothing to do with the case.

Equal pay is possible when you know you are getting equal results, not guessing at it. Outside of these mills, according to this table, women receive 12 3-10 cents an hour as spinners, men 14 8-10 cents. In the mills both receive 16 8-10 cents — and look after three instead of four frames. The average wage for weavers in the country is 16 4-10 (a half cent less for women). At these mills it is 25 cents for both for four looms, and 17 $\frac{2}{3}$ for two narrow looms.

It is interesting, in connection with the charge that the wage scale is the result of speeding both operatives and machines, to learn that in several cases speeds were reduced in order to get the best results. For instance, spinners formerly cared for 800 spindles and 8 sides. It was found they could turn out more and better work with 600 spindles and 6 sides. The revolutions per minute of the spinning spindles were reduced from 8,800 to 7,600, simply because it was a more efficient speed.

Too strong emphasis cannot be placed on the fact that the increase in wages under a true scientific management is not the result of "Drive." The speed at which the product is turned out is fixed always after careful observation. Common sense should tell one that employers do not take from three to

five years to install a system in their business, spend possibly tens of thousands of dollars, educate hundreds of people, and then ruin the whole thing at once by killing off the men and women on whom they depend. Nothing could be more unscientific than that.

The worker cannot be speeded under this system. He must follow a steady, unhurried gait. He must have an intelligent control of his mind; he cannot be in an unnerved or excited condition. That at once makes him unfit for his task. An intelligent foreman under this system, if he sees that a worker is showing signs of nervous agitation or strain, insists that he rest. In many shops where an operation must be put through on schedule time workmen are practically compelled to take ten or fifteen minutes off now and then out of their chairs, to break the tension that working on a set schedule causes.

The men and women making the highest wage under this system usually work in a leisurely way. At the cotton mills I watched a nervous young Italian girl at a spinning frame. She ran up and down the frame, flew from spindle to spindle, and filled the air with useless motions. She was not content to watch her own frame, but seeing something wrong with that of another girl darted at that. She gave the impression of terrific speeding. On the opposite side a girl of calmer temperament worked leisurely at the same number of spindles. These two girls were earning the same wage.

Usually, however, where a girl works in this ex-

cited fashion she earns less. For instance, in the Clothcraft Shop of Cleveland I took pains to compare the daily pay-cards of girls that I saw working with unusual ease and those who seemed to be speeding. Without exception I found that the former were earning more than their straining sisters. I spoke of this to the manager and certain of the teachers, and they assured me that the girl who drove herself was an undesirable operative.

In a wire-making room of one of the factories of the National Lamp Company, I once examined the posted reports of the daily output of a large number of girls. Day after day one little Hungarian stood at the head. I watched her for some time. She gave the impression of actually loafing over her machine.

Colonel Wheeler tells me that after scientific management was installed at the Watertown Arsenal they were obliged to change their estimate of the working capacity of many men. Not having formerly any adequate measure of work, the foreman often took it for granted that a man who seemed to be doing nothing was doing nothing, and tried to drive him. The result was that men fell into the habit of appearing busy when watched.

If the superintendent or inspectors appeared a whistle went around the shop and every man began to perform unnecessary motions in order to look busy! Whether a man appears busy or not has nothing to do with the case under this system. It is the work he turns out which tells, and there is an ab-

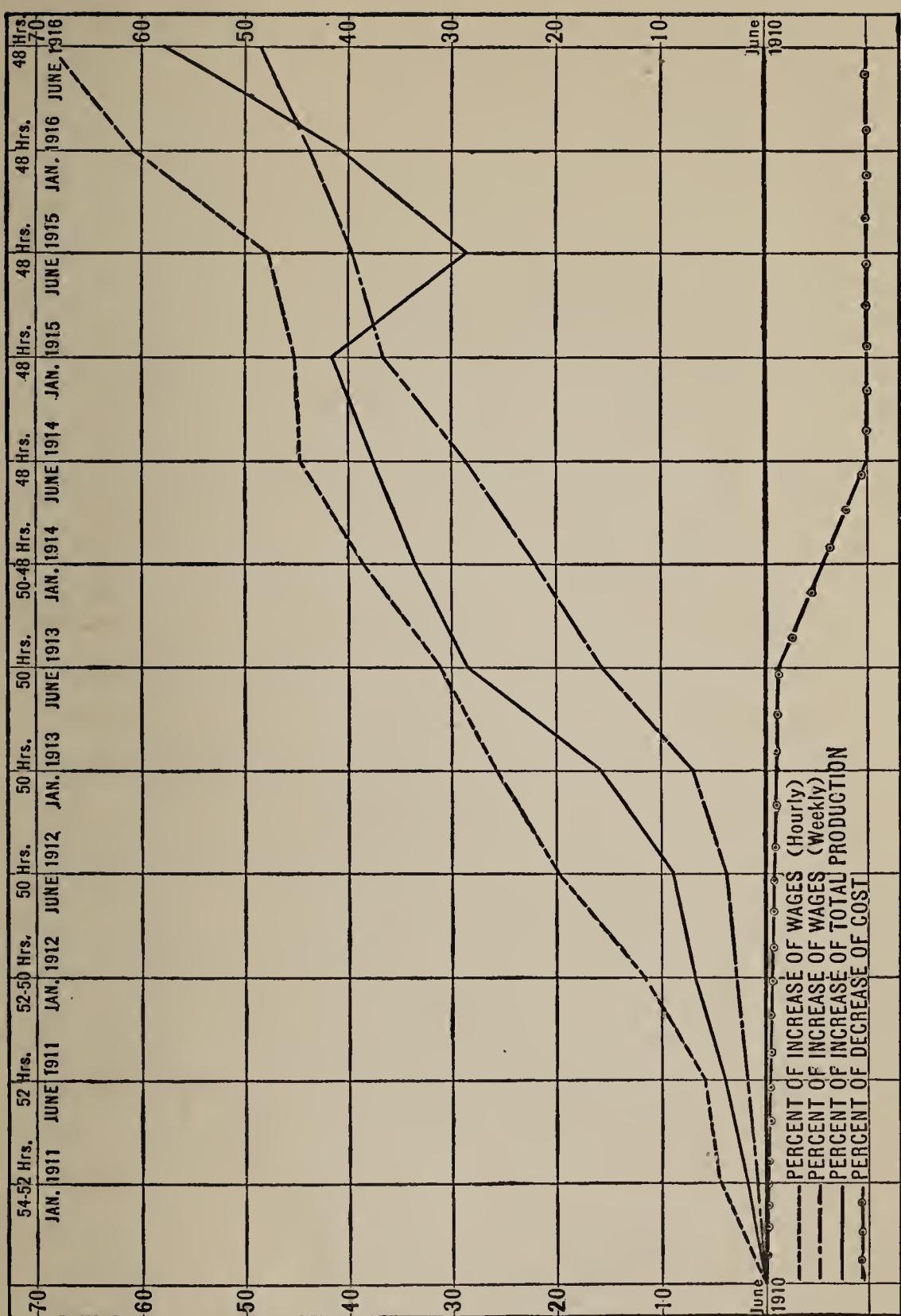
solute measure of that. The difference with which the worker regards the visits of the management is one of the first changes in shop temper which a visitor familiar with factory and shop forces notices.

The experience of the Clothcraft Shop of Cleveland with wages under scientific management has been remarkable. It is an old concern, the oldest in the country. The present manager, Richard Feiss, brought to the shop an unusual equipment. He was graduated a few years ago from the Harvard Law School, and after a short turn at the law he concluded he would prefer to go into business, and returned to Cleveland.

He seemed never to have regretted his law course, however. I have heard him say that he learned more about making clothes in the Harvard Law School than he ever did anywhere else. His theory was, on entering the business, to learn to do everything that was done in the factory. And this he literally did. He spent three months on the various processes. At the end of the time he is reported to have appeared before certain dignified members of his family with a suit of clothes on his arm. "What do you think of them?" he said. They were looked over and pronounced fairly good. "Why?" they asked. "Well," he said, "I made 'em!"

Mr. Feiss handles a difficult labour group. Of the 828 persons in the shop in the summer of 1914 over half were foreign born. They come as a rule without experience, often speaking no English.

RECENT EFFECT ON WAGES: PRODUCTION COSTS AND HOURS OF SCIENTIFIC MANAGEMENT IN THE CLOTH-CRAFT SHOP OF CLEVELAND, OHIO.



They have all to learn. The theory of the shop is that they are worth teaching; and, moreover, that the more they know, the healthier and happier they are, the better "pants" they will make; also, the better "pants" they make the better citizens they will be!

Mr. Feiss's theory of what a proper workshop does for a force and his reduction of hours have already been referred to. On page 215 is a table showing the effect his system has had on wages. Starting with the basic wage in Cleveland in the industry, this table shows that in 6 years — June, 1910, to June, 1916, the hourly wages in the shop have increased 69 per cent., the weekly 49 per cent. This is a greater increase than is usually found under scientific management. It is due to the greater emphasis Mr. Feiss places upon the human relation, the more attention he gives to health and happiness.

An interesting feature of this table is the relative gain of employers and employés it shows. It is quite generally charged that the system gives the lion's share of the increase in profits to the owners. In this case the two have kept fairly close together, labour being ahead up to 1913. Since that time the decrease in cost is giving Mr. Feiss a slight advantage.

In the cotton mills referred to above the practice is to divide the increase with labour. For instance, if a department which had been turning out 1,000 pounds daily under the old system raised it to 1,200 under the new, 20 per cent. was added to wages.

Mr. Dodge, of the Link Belt Company, told the Industrial Commission that, while fully 70 per cent. had been added to wages, the dividends had been increased only about two per cent. But there were other gains to the management which Mr. Dodge considered tremendous — a better quality of output, a lower price to the consumer, increased facility in handling orders. "We get 86 per cent. of our work on time now; formerly we were behind with 86 per cent."

At the government arsenal at Watertown, Massachusetts, where the Taylor system has been on trial since 1911, there has been an increase of fully 25 per cent. in wages wherever it has been possible to adopt the system. At the same time there has been a substantial reduction in the cost of production. General Crozier, Chief of Ordnance, declares that this has been done without overexertion, and both the look of the men in the plant and the records of time lost because of illness bear him out. Nevertheless, there is a determined attempt making to drive the system from all government factories.

In the spring of 1915 Congress passed a rider to the Army bill forbidding that any part of the appropriation in the bill be used to pay premiums or bonuses to employés in government plants. As soon as this bill was passed by the Senate, but before it had become a law, General Crozier suspended premium payments at the Frankford Arsenal, Philadelphia. A protest signed by several hundred employés was sent at once to General Crozier. It not

only showed what these employés thought of the system, but what they were making under it.

1. The premium system of payment was established in the manufacture of small-arms ammunition about five years ago, and that there was a complete understanding between ourselves and the management of the arsenal that there would be no reduction of the premium rates while the manufacturing processes remain the same. This agreement has been lived up to by the management and by ourselves and to the mutual satisfaction of all concerned.

2. We believe that this system has been eminently successful, because, according to published reports, the manufacture of small-arms ammunition at Frankford Arsenal presents a decided economy when compared with costs of the same ammunition procured from private manufacturers.

3. The premium earned by all the employés engaged in the manufacture of small-arms ammunition during the month of December, 1914, has amounted to \$3,747.72, or to approximately \$45,000 for the year, and therefore the abolishing of the premium system means an annual loss to us of approximately \$45,000.

At the present writing there is a bill before Congress forbidding the use of the stop watch and the payment of premiums in government plants under penalty of fine or imprisonment. The bill shows complete ignorance of how and why the stop-watch is used. It states that it is held over a man "while at work" to find out the largest amount the "most capable man" can do in a given time, and it declares that by premiums and severe discipline this standard time is enforced, and that if the workman

fails to reach it, he loses his employment. This bill is wrong in every essential point. The stop-watch is used in the laboratory, not held over a man while he is doing a piece of work. Its part in the task is over then. It comes in at the preparatory stage, when the task is being studied and the proper time in which to do it fixed.

I have spent many, many hours watching men and women working under this system, and I have never but twice seen a stop-watch used in shop or factory. In one case the instructor was studying a new piece of work in order to find in what time each of its various parts should be done. He and the workman were in friendly consultation; that is, they stopped more than once to debate a point. The stop-watch attracted no more attention than the tools the man handled.

In another case, so the foreman told me, a girl thought her instruction card was wrong; that is, she thought the time which had been set as a fair average in which to do a certain part of her task was too short. She had questioned it, and the instructor, stop-watch in hand, was examining into the cause of her dissatisfaction.

Again, the time of a task is far from being the fastest of the most capable man. After the good average workman has been timed and his standard found, a very liberal allowance, often as much as two-thirds, is allowed in order to make the period fixed reasonable for the average man. As for discipline in case of failure, I never heard of any save

the loss of the premium, and the management regards that failure as its own, as explained above.

It is probable that most of the opposition to the system comes from ignorance, and that the ignorance comes from a failure of the management to explain frankly to employés at the start the meaning and bearing of the experiments they are about to make. When the New England Butt Company was put under the Taylor system, the management and experts held weekly open meetings, to which everybody in the shop was invited. There, every attempt was made to explain to the men the principles and machinery of the undertaking. There was no mystery, no evasion. Every man who wanted to ask questions, to make a speech, to criticise, had his opening. Such a procedure, at once democratic and educational, disarmed suspicion and prejudice and interested the workers.

At the Plimpton Press at Norwood, Massachusetts, the time studies are kept posted near the machines on which the particular operations are to be carried out. The workers become familiar with them, discuss them, and if there is a particular factor in the analysis which they consider wrong they have the right to challenge its reasonableness.

Every experiment which promises to throw light on the hard problem of fitting rewards to services should be welcomed by all honest men and tested with good will and fairness. No man who looks over the productive world to-day and compares the returns the various factors receive can escape the

feeling that we are working in a bewildering fog, where small things often loom like giants and great ones turn to pygmies. We have great fortunes which all the world recognises as the result of cunning, of unfair privileges, of daring gambling, of brazen misrepresentation, and by their side are tens of thousands of men who have worked faithfully from boyhood to old age on a daily wage which barely gave them food and shelter, and left them at the end at the mercy of the world. The quality of service rendered by those two groups cannot be compared, so far superior is that of the labourer. We may call these the accidents, not the rule, yet they are familiar enough to seem to many the rule. In any case, they are grotesque injustices which it is the business of an intelligent society to correct and prevent.

Scientific management, while it does not touch the basic wage, simply regards it as a starting-point, does recognise the most important of all principles in this matter of measuring the daily service, and that is the relation of the amount and quality of a man's work to what he gets. It is the greatest contribution to the wage question since the day it was settled, for this country at least, that every man has a right to the fruit of his labours, however ridiculously inadequate that fruit may be.

CHAPTER IX

EXPERIMENTS IN JUSTICE

Among the many experiments in human relations which the new American man of business is making, there is none more difficult and none more noble than that of finding a just measure for the value of the service each worker renders in an undertaking. It is the greatest voluntary experiment in justice that the present world offers.

Certain attempts to break up the purely arbitrary wage scale were touched on in the last chapter. The contention there was that a uniform wage, though it be the highest current, is not just, because it is not fitted to bring out the varying abilities of men. There must be a method of paying adjusted to the possible quality and quantity of a man's output — something which will stimulate him and satisfy his sense of justice.

But even when we have reached a satisfactory method of fixing the basic wage and have added to that the wisest way of measuring the extra daily service a man may give, there still remains something for which a workman who stays by a business for a period of time is not paid, something which the great majority of employers of all kinds, public and private, never have taken into consideration. It

is an intangible service, but essential and undeniable; it is what he contributes to building up the good will of the business.

"Good will" is a curious thing compounded of friendliness, experience, character of workmanship, established relations. A self-respecting workman who over a long period has talked proudly of "our shop," "our old man," "our goods," has helped drive that business into a community. In an undertaking like a department store, the satisfaction and pride of the women and girls in the place is recognised as one of its real assets. The importance of a stable pay roll can hardly be over-emphasised. It does not matter how humble the task, if it is a task essential to turning out the product it costs something to educate the doer. Every change is an interruption; every change starts friction which runs through the whole body.

How is a stable force to be secured? There is only one way, and that is to overcome the motives for change, replace them by motives for staying. The same reasons that make men and women restless in professions, in society, in schools and churches, make them restless in factories and mills and shops.

Why do you not stay in your law firm, your college, your bank? It may be because you are asked to work in rooms so badly ventilated that you know your health is suffering. It may be because the pay is the lowest and the hours the longest that the management dares impose; because there is no advancement before you, because you know if you do stay on

the day will come when you will be cast into the dump heap of the worn-out — with not so much as a month's pay to help you in readjusting yourself.

It may be that the spirit of the place is sullen, harsh, suspicious, with no friendly looks at the end of the hard days, no sympathy in times of trouble, no respect for independence and ambition.

These are sound reasons for restlessness in men and women. Remove them, and the men readily respond, whether they be labourers in the yards, clerks in the counting-room, or preachers in the pulpit.

Five years ago the Clothcraft Shop of Cleveland, already one of the best working places in the town, was hiring 1,570 workers a year to keep up a force of 1,060. Then its present manager, Richard Feiss, undertook to organise it on a scientific basis. The shops were made as bright and as comfortable as he knew how to make them; the tasks were taught the newcomers by instructors hired for that purpose, opportunities for earning more and for steady advancement offered, and everybody was shown how to take advantage of them; hours were shortened. Life in the factory was organised for health and happiness — with what result? More work is being done to-day by 20 per cent. fewer people and the "labour turn-over" has fallen 66 2-3 per cent.

At the Ford Motor Works, in December, 1912, 3,594 of the 5,678 men hired turned out to be "floaters," "five-day men," as those who come only to go are called. A month after the profit sharing

scheme was announced, the new practices in fitting men to their tasks installed, these floaters fell to 322!

There never was a more foundationless tradition than that working men and women do not respond to efforts to make the conditions under which they labour more wholesome, decent, and just. They respond as quickly as other groups of human beings.

The failure of business to recognise long terms of service suitably causes peculiar bitterness among working people, because the results are usually so tragic. Can there be an experience more calculated to make a young man of education and efficiency question the industrial organisation of the country than, — after giving his first fresh years of enthusiasm to an undertaking,— to find himself summarily laid off with no recognition of the extra service he knows he has been contributing to the business? Yet how much better he is off than the workingman suddenly dismissed, without even the word of explanation the former will have received.

And if this is hard for young men, how much worse it is for those of sixty and seventy. Rarely do I go into an industrial community that I do not meet old men who after thirty or forty years of service have been dropped — “Too old,” “Worn out,” “He has had good wages but saved nothing. His own fault.”

These are the explanations. They do not explain. They are no more adequate than to say of the man hopelessly crippled in a factory: “It was a bad accident, but we were not negligent.” The one

man's life has been wrought into the factory, as the other man's limb has been sacrificed to it, and the factory has an obligation to each. It cannot use all that is profitable in a human being and then cast him adrift — part of the price it must pay is finding him a safe mooring.

It is generally supposed that what is called profit sharing meets or at least ought to meet, the obligation incurred by long service. It all depends upon the form and motive of the scheme. Most profit sharing has no other purpose than to increase profits. That is, it is designed to stimulate workers to use more fully their capacity. It has the same object as piece rates and bonuses and premiums.

Mr. George A. Chace, the administrator of one of the oldest and most successful of these undertakings, that of the Bourne Mills, at Fall River, Massachusetts, used to speak of the profit he paid out as "interest on interest." "It seems no more than right," he once wrote to the employés, "that it should be made clear to every one expecting a share in the profits that there is no intention on our part to make free gifts of money for nothing, but rather that every payment is the carrying out of a distinct agreement, or contract, under which both parties to it are hoping for mutual benefit."

And again he wrote: "You can best express your appreciation of profit sharing by earning more pay. This does not mean that you will have to work harder — hard work brings poor wages — but, rather by attention and skill, take the 'stitch in time

that saves nine.' If by a little more care and watchfulness you can earn 40 or 50 cents more a week, it equals 5 per cent. advance in wages. Thus you get the extra pay, and we get the extra production. That is the secret of profit sharing."

This scheme for paying "interest" succeeded at the Bourne Mills. But it was not the extra money alone to which the success was due. A few years ago I spent some days in Fall River at a time of serious industrial depression. Practically every plant was closed, among others the Bourne Mills.

I talked to many operatives about conditions, and I was struck by the number who quoted this factory. "They try to do right over there;" "They take you in;" "They share their profits;" "They explain things." These were some of the evidences I found of a more friendly feeling for the concern than for others.

I wondered that the small extra sum that each received in profits and the efforts I know the mill had made to keep its wheels running could win quite as genuine a friendliness as I thought I detected. It was only recently, when there came into my hands the series of letters from which I have just quoted, written semi-annually to the employés by the late treasurer, George A. Chace, that I understood.

Here was proof that the operatives were, as they said, considered as part of the enterprise, that satisfying one obligation did not mean that the company thought no more of their claims and needs. On the contrary, the letters show that Mr. Chace and the

Board continually studied and tried to solve the problems which profit sharing disclosed.

There are other plants in the country where the same form of profit sharing has been tried for as long and is regarded as a success. But for every ten places it has succeeded there have been ninety, probably, where it has failed.

There have been many reasons for these failures. Mr. Frederick Taylor once gave the best in a public address on profit sharing: "The average working-man cannot look forward more than a month to profits." "Hope deferred maketh the heart sick."

If you are working over a loom eight hours a day, you will hardly remind yourself hourly that the extra wage you will get six months or a year from now is going to depend on the extra efforts you make at the moment. But if you have a pay card at your side on which your hourly wage is shown, you will probably make the effort to earn your premium — particularly if you know it will be put into your envelope on Saturday night. Profits paid in money at the end of the year can never be as real and constant a stimulus to workers as piece work or premium.

Nor is this form of profit sharing often useful in providing for the evil days which old age brings to so many of those who live by the wage system. This has been a sore disappointment to many an employer who, in adopting it, has had a notion that by so doing he was meeting all his obligations to his employé — besides doing a generous deed! He argues that the profits will be set aside as a nest egg, and

that by the time the worker is superannuated he will have a tidy sum to carry him through his old age, and bury him.

If it worked out that way, he might have reason for feeling the business was supporting the faithful servant to the end. But the first shock to the enthusiastic employer is that the worker does not take this view of it. He does not see any more reason for saving this increment than saving a share of his daily wages. It is wages, pay for extra daily service. It has no relation to what he earns by staying with the business for a term of years. He spends his money as soon as he receives it — and often before.

At the big Crane works in Chicago the ten thousand or more employés have been receiving at Christmas time for fifteen years a dividend of ten per cent. in wages; everybody in the place at the time receives it. It is regarded by the management as part of its "policy." They believe it contributes to efficiency and peace. But the opinion of those in the plant best fitted to know is that this dividend is spent *before* received; that it is rarely regarded by the working-men as a nest egg.

Fels and Company of Philadelphia, widely known as open-minded employers, always willing to try an experiment, have had a form of profit sharing for some twelve years. They regard it as "a great thing in handling people." But they do not consider it entirely satisfactory, largely because those receiving it count on it from year to year, and make use of it

in advance, instead of saving it. That is, it has been good for the management but not so good for the employés!

With the realisation that the extra wage was not being used providently, and that something further must be done if old age was to be cared for, many employers have abandoned the scheme. There has been a vast amount of hopeful experimenting dropped in our industries because employés acted like average human beings and not like superior beings, as the employers expected them to do.

Why workingmen, whose bare necessities so generally outstrip their means and whose legitimate wants rarely be satisfied, should exercise a foresight that we do not get in more easily-placed groups has never been satisfactorily demonstrated. They do not do it for the same reason the more comfortable do not do it, because they are ordinary human beings, by whom thrift is as far from being generally practised as it is from being generally appreciated as an interesting game.

The form of profit sharing which may fairly lay a certain claim to meet the obligation that a business incurs from long-term service is that which is paid in stock. It is a device which in a degree brings the employés into the enterprise, giving them an investment as permanent as the business is, and whatever power in the undertaking stockholding gives — a power which in time, it is easy to see, might become great, if not controlling.

There are to-day a number of these stock owner-

ship plans, operating to the satisfaction of both sides to the bargain. The one which has stood the longest test of time, and which has recognised most fully that a man's needs are not necessarily met because he has a regular wage and a share in profits into the bargain, is that of the Nelson Manufacturing Company, of Edwardsville, Illinois. It is an experiment in justice, born of a face-to-face experience with the workings of injustice.

The founder of the concern was manufacturing in St. Louis in the seventies when the great railroad strikes tied up the country. He weathered them, but determined that, as far as his business was concerned, the conditions which made war in industry inevitable for thinking workingmen must be avoided. He went at the question thoroughly, adopting plans which, on the whole, are the most comprehensive which have been tried in this country for as long a period as twenty-five years.

Mr. Nelson began by moving his plant some fifty miles from St. Louis to the outskirts of Edwardsville, Illinois, and there, in 1890, started a village, called LeClaire in honour of the pioneer French profit sharer. He pledged his employés at the start that, after paying them the current wage, giving capital a six per cent. dividend, and taking care of sinking fund and other obligations, he would divide among them the profits in proportion to their wages.

In the twenty-five years since the plan was announced the dividend has never fallen below 10 per cent. and has risen as high as 30 per cent. This is

not paid in money, but in stock. To-day the employés of the Nelson Manufacturing Company own over one-fourth of the concern. In 1905 customers were admitted to a share of profits, and to-day the two interests own about one-half of the business. The one plant has become three — one in Indiana, one in Alabama, and there, also profit sharing and other features of LeClaire are followed.

This profit sharing plan, or, as it is gradually coming to be, partnership in the business, with other co-operative features has tied the force at Edwardsville together in a most unusual way. There are many men still active on the force (in a body of about three hundred) who saw the building of the attractive plant and of the first house in LeClaire.

In 1911, Mr. Nelson celebrated the coming of age of the town (he and the officers live there, side by side with the men) by inviting to his house all of the employés, with their families, who had been ten years in the plant. The list was so big that the house wouldn't hold them, and he was obliged to raise the age limit! In a talk at the "coming of age" party, Mr. Nelson gave the real secret of its achievement:

We have not been ambitious to become great or rich; but we have sought to make business a means to independence and social life.

He gave in a few words the reason why, in his judgment, so many of the scores of profit sharing schemes all over the country have been followed by no better success:

The plans are usually arbitrary and coupled with restrictions. Immediate results are expected, and not realised, and *the motive is better business, not more equal division.*

The success at Leclaire is a success of justice, not of calculation.

A man who stays with the Nelson Manufacturing Company to the end of his working life, taking full advantage of its opportunities, is able to provide fairly well for his old age. Suppose that for forty consecutive years he earns an average of \$600, and that the average dividend on wages is 15 per cent. Suppose that he keeps his stock, and as he goes along buys from his wages one of the tidy Leclaire houses: many men have done this already. At the end of his forty years he will own stock worth \$3,600. The interest on this will be \$216. It is a fair provision for a man of sixty-five, but it means, of course, that he will be obliged to cut into his capital if he lives until he is eighty, particularly if he has one or two persons dependent upon him. He will leave little behind him, unless he is able to piece out with "odd jobs," as a man of this type in fair health undoubtedly would do.

At all events, here is a plan which gives a man of energy and thrift a chance of becoming and remaining measurably independent to the end of his days.

Few of our recent profit sharing experiments work out quite so generously. Take that most interesting venture in co-operation by the Boston Consolidated Gas Company — a species of partnership between

a private concern under State regulation, the public, and labour. The public gets its dividends by reductions in the price of gas. (The company claims that this is a larger dividend than it receives itself.) Employés get theirs from a premium on their annual wage or salary, paid in stock, as in the Nelson concern.

Not everybody is admitted, however. In the apportionment made in June, 1916, 698 out of 1,039 were on the "Honour Roll" as the list of profit sharers is called. They hold 3,910 shares which have a value at this writing of \$342,530. In the ten years this plan has been in operation, a man in the company, receiving the average annual wage of about \$963, if on this honour roll, would have accumulated about \$759 worth of stock. If he works for the company for forty years, like the supposed man at Leclaire, and keeps his investment, he will have in 1947, at this rate, something over \$3,000 worth of stock. If he can get 6 per cent. interest on this he will have an income of \$180.

It will depend on many things whether at sixty-five he can live comfortably and independently on this sum. But he will have been a partner in a great and promising experiment. One of his fellow workingmen will have represented him on the Board of Directors, and the chances are that by 1947 any failure of the present plan to fulfil the just demand, that long and efficient service should mean a decent independent support for a man by the time he is sixty-five, will have been met.

Since 1902 the United States Steel Corporation has each year, 1915 excepted, offered a limited amount of stock on special terms to officers and employés. The amount depended on the wage and salary. Up to 1915 if he earned a thousand dollars it was two shares of preferred or three of common. If \$10,000, ten of the one or eighteen of the other. If \$20,000, fifteen of the one and eighteen of the other. The price fixed was 105 for preferred, 57 for common. On account of the disturbed condition of the steel industry at the close of 1914 the privilege of subscribing for stock was not renewed at the end of the year, but by the end of 1915 things had so changed that it was possible to again make the offer. There was some slight changes in the plan. No preferred stock was offered. The price of common was raised from 57 to 85. The amount offered was limited to 35,000 shares. The stock is paid for in monthly installments to be deducted from salary or wages of the subscriber; the minimum instalment allowed was \$2.50 for preferred and \$1.50 for common under the former terms (it is now \$2.00 for common), the maximum 25 per cent. of salary or wages. Three years are allowed in which to pay for stock.

There are arrangements for cancellation which are entirely fair, if intelligently administered. If the stock is held five years it receives an annual bonus, \$5.00 on preferred, \$3.50 on common, and there is an extra bonus under certain conditions.

At the end of 1913 there were over 35,000 em-

ployés out of about 200,000 holding stock in the entire Steel Corporation. The value of these holdings was nearly \$15,000,000. In the spring of 1914 something over half of the 6,000 workmen in the rolling mill at Vandergrift, Pennsylvania, had been subscribers in the 12 years since the plan was started. At that time I talked with an employé who had been buying all the stock he was allowed since 1903. He gave me the exact results in his case. The first year he took four shares which he still has. In 1908 these four shares began to draw the bonuses promised if held five years. In all they have amounted to \$260.16. In the years between 1902 and 1909 he bought in all twenty-five shares. All of this stock had earned the extra rewards for holding. What it amounts to is this: The twenty-five shares cost him \$2,106 which was paid in monthly instalments taken from his salary and from interest accrued. At the end of five years he received in bonus on the stock \$1,315, which deducted from the amount he had paid made the stock cost just \$31.64 per share.

That this plan is advantageous for people earning \$2,000 or more is clear. It would seem to mean little to the man on less; and the great bulk of the Steel Company employés receive less. Nevertheless in January of 1914, 15,295 men earning less than \$800 a year took stock. In 1916, 7,231 men receiving less than \$800, 16,152 receiving from \$800 to \$2,500, and 1,556 of those receiving over \$2,500 a year, 24,939 in all, took stock to the amount of

49,741 shares. The present annual cost to the corporation of the plan is about \$1,135,000.

There is something more than the amount in the ownership. There is the sense of having a share, however small, in the undertaking with which you are connected, the sense of dignity that comes from the consciousness that you are accumulating. They see too that bulked this stock becomes a power. A remarkable incident at the 1914 stockholders' meeting of the Steel Corporation shows this. There appeared at that meeting employés of several of the corporation's subsidiary companies. They had been elected by their fellows, and their expenses paid to go to this meeting and to vote their combined stock. After the regular proceedings the meeting was open for discussion. Judge Gary finally called upon one after another of these workingmen to speak. Their remarks may have been slightly moderated by the unaccustomed company in which they found themselves, but not sufficiently to spoil their flavour of sincerity and of thoughtfulness. They talked of many things. They made some suggestions which the Corporation ought to consider. They all approved the stock-holding plan.

"Show me," said a sheet iron heater, who now holds 33 shares, "where I could have been helped to an investment of say two dollars a month, where could I invest that for twelve per cent. The Steel Corporation did not have to give that to me, gentlemen; they did not have to provide that investment for me. And I contend that it is decidedly unfair

for those who seem to criticise or want to criticise to say to the world that we would be ungrateful and that we did not appreciate the things that are being done."

Another of the representatives, a roller from Wheeling, West Virginia, said in reference to criticisms of the scheme:

"I am not compelled to buy it: we take it as we want it. I am still buying every year, and I have every share that I have bought. I find it is a good investment; in fact, you cannot get an investment anywhere where you can pay two or three dollars a month on a share of stock and have the interest coming in to you right along from the moment you start."

No successful stock-ownership plan in the country is based on a longer experience or a firmer determination to find something practical than that of Procter & Gamble of Cincinnati. The scheme as first worked out was put before the employés of the concern — then between 450 and 500 persons, early in 1887. It was presented frankly as a business proposition. The firm believed it possible to increase profits if they could increase the "diligence, carefulness and thoughtful co-operation" of their employés. They hoped to do this by sharing profits. The share was fixed in the following way. The amount of money divided bore the same relation to the total profit as the amount of wages including the partners' salaries bore to the total cost of doing business. That is — if the latter was \$8,000 a year

and the total wages \$1,000 — then one-eighth of the profit was considered the employés share or dividend. Not everybody was to be included. Boys and girls who were earning the beginner's wage or any one who had been less than three months with the firm did not participate. This rule cut the number of participants down to 193 of the 450 employés.

The business was gaining steadily and the profits were handsome. They were distributed semi-annually at Dividend Meetings which from that day to this have been regularly observed as holidays and as celebrations. Last August, 1916, the 58th of these Dividend Meetings was celebrated.

At the sixth of the dividend meetings in May 3, 1890, it was announced that in the three years the plan had been in operation \$60,000 had been distributed. On this occasion it amounted to nearly 16 per cent. of the wages. But the firm was not satisfied. Their hope of arousing all the participants to "diligence, carefulness and thoughtful co-operation" had been disappointed. There were workmen who did not respond — though they took the profits. This the firm held was unfair, particularly to those who were trying to serve the business. Accordingly a new method of distribution was announced. The employés were divided into four classes and the dividends were given out according to merit.

That which happened in those years in many concerns where this form of profit-sharing was tried happened in Procter & Gamble's. The dividend

was not a continuous spur. For a few weeks after it was paid large numbers were enthusiastic and faithful, then cooled off. As the dividend day approached it worked like an approaching Christmas festival on a Sunday school class. There was a general revival of effort. But it could not hold them. One reason for this, no doubt, was that so large a number of the workers were boys and girls with the natural irresponsibility of youth towards efforts which are to be rewarded in the future.

There are a number of firms in the country who have made the same discovery as Procter & Gamble did at the end of six years, and who have shrugged their shoulders and said, "Never mind — go on — it isn't doing much good, but it probably contributes to good will" — and they pay the dividends much as they give turkeys, because it is the custom; and the employés accept it — as they do the turkeys — it is the custom. Procter & Gamble refused to go on with a plan which they considered a failure. In 1893 they cut off all from a share in the profits who were earning more than \$1,500 a year.

But they did not drop the subject as scores of firms in the country who have had a similar experience have done. They had become convinced of the justice of the idea. If it was just, it was good business and since this was so it was for them to find a way that would work. It took ten years to do this. They were ten years of extraordinary development in the business. Procter & Gamble had started as

a partnership in 1837 with a capital of \$9,000. They made candles and soap. There was no change in the business organisation until 1890, when the present company was incorporated. To put the capital at \$6,500,000 was considered conservative and was, for the net earnings in that year were nearly \$600,000 — in the year following nearly \$900,000, and in 1900 \$1,000,000.

This expansion had come legitimately enough through the development of new products and the application of new processes and inventions. The prompt sense which had led the early firm to see that candles were to fall before kerosene, and to develop its soap market had never been dulled in the business. It did not rest itself on soap alone. It had added glycerine-making when the process for extracting glycerine from what had been a waste of a soap factory was discovered, and now one of their leading products is glycerine. When it was discovered that cotton seed oil could be used for soap-making instead of tallow and greases they began to manufacture the oil from the seed itself. They crush 4,000,000 pounds a day now in the season and operate cotton seed oil mills at at least a dozen different points. It has developed an enormous business in different lard compounds — a natural out-growth of their other products.

It was then to a business of unusual virility and promise that the new profit sharing scheme was applied in 1903. It was a scheme designed for people earning under \$1,500 only, and it was arranged to

apply to any one and every one in the force irrespective of wage or time of service. That is, a boy or girl on six dollars a week could become a profit sharer as soon as he or she began work — if he or she accepted the terms. The little booklet of some 3,500 words which explains the new plan shows the pains that had been taken in developing it to what was believed to be a workable point. The title of the booklet gives a clue to the nature, "Revised Plan for Trust Receipt Dividends for Employés Through Stock Ownership."

The point for us here is how does it operate? How does it operate in the case of an employé earning \$600 a year? According to the contract the firm offers he is entitled to subscribe at once for common stock in the business to the full amount of his yearly wage — in this case \$600. As soon as the trustees pass on his application he will be asked to make a payment of \$15, or $2\frac{1}{2}$ per cent. of the worth of his stock. When this payment is made there is issued to him by the trustees who have the business in charge a little book called a Trust Receipt Pass Book which is his contract with the company and in which all transactions over the stock are recorded.

This contract binds him to pay each year not less than 4 per cent. on the amount of the stock he has taken, that is, not less than \$24 until it is all paid for. It binds Procter & Gamble to pay him annually a dividend on his wages of 20 per cent.— in this case \$120. This 20 per cent. is the share of Procter &

Gamble's profits which belongs to each employé as soon as he becomes a stockholder in the concern. It is applied to the price of his stock, instead of being paid directly in money. In addition to what he pays from his wages on the stock, and to what the firm applies, there is also applied the regular dividend which the common stock draws.

This has varied in different years since the inauguration of the plan from 12 per cent. to 20 per cent., with certain extra stock dividends coming at various times in addition to the regular dividends.

The present rate of dividend is 20 per cent. in cash, payable quarterly, and 4 per cent. payable annually in common stock. This is a yearly arrangement, the Company in 1913 having authorised an increase in the common capital stock from \$12,000,000 to \$24,000,000, to be issued to common stockholders only, in the shape of an annual 4 per cent. stock dividend, until the entire amount is issued and outstanding.

The employé earning \$600 per year, subscribing to stock under this plan, with the present market value of say \$800 per share, would have an interest in .75 of a share of common stock, toward the payment of which would be applied his profit-sharing dividend amounting to at least \$120 per year, the cash dividend upon his stock, which would amount to \$15 per year, in addition to which he would receive a credit, without cost to him, annually of the 4 per cent. stock dividend, compounded each year;

the 3 per cent. annual interest upon the amount remaining unpaid at the beginning of each year would be charged to his account.

"It's a poor fellow," one of the workmen remarked to me, "that can't work out that in four years. He ain't worthy of the chance." Suppose he does work it out in four years. When the pass-book shows it is paid for, a paid-up trust receipt is turned over to the employé. The stock is now his and he will receive semi-annually on it in cash both his regular stock dividends and his share of profits. That is, he will receive at least \$135 in cash on an investment which in four years has taken out of his regular earnings of \$600 a year, or \$2,400, just \$111. The interest does not come out of wages.

If he has succeeded in earning such an investment in four or five years, it is probable he will be keen to increase it. He will be permitted to do so at the end of five years, but only by an amount equal to 25 per cent. of his wages, that is, in his case only \$150 worth unless indeed, as is probable, he is by this time earning more money; but now instead of getting a 20 per cent. dividend or share of profits, he gets one of 25 per cent. At the end of ten years, he will be allowed to subscribe for 150 per cent. of his wages, and his profits now will be increased to 30 per cent. of his wages. Suppose that in this ten years he has doubled his wages, that is, is now earning \$1,200. He can increase his subscription to \$1,800 worth of stock, paying down 2½ per cent. of the increase; and in addition 4 per cent. each year until he has paid for

it. To this will be applied annually as his share of profits 30 per cent. of his wages, \$1,200, or \$360 a year, plus the 20 per cent. dividend on his stock which will amount to something over \$50 a year.

This is the gist of the scheme Procter & Gamble put into operation twelve years ago. How has it worked? In 1915 I was permitted to go over the plant at Ivorydale and talk to many men and women about it. At that time 735 out of 1,200 employés at Ivorydale outside of the officers held stock. I failed to find one who had taken advantage of the opportunity who was not impressed, some of them to the point of enthusiasm, others to one of bewilderment. I remember a Russian Jew who years ago was employed as a day labourer and is now earning \$100 a month who had taken all the stock the plan allowed. He had bought a house and put four children through the public schools. "It's the greatest thing I ever heard of," he told me, "only I can't get enough." He was crying for ten shares more and claimed he could pay for them.

I was introduced to a machinist who had been thirty years with the firm. "Yes, mar'm, a great thing. My wife will never have to take in washing. I'm worth \$12,000, because of that scheme; but that isn't the best thing here. The best thing is they treat you white. This is the only place I ever worked where they do. See that eye — gone? The biggest piece of steel ever taken out of a human eye came out of that." (This with great pride.) "I was four months in the hospital with that eye.

Never cost me a cent, and every week my wife received my pay envelope. This profit-sharing isn't all we have here. We've got an insurance and pension plan that's the greatest thing you ever heard of. Just let me tell you about that. 'Tain't that they favour us in work. We work here, work hard; no mollycoddles here, but we get treated white. You're a man here. Yes, mar'm, I could talk all day about Procter & Gamble, all day."

One of the reports which interested me most was that of a prominent union workman to whom I asked an introduction, because of his sturdy radicalism. "What do you think of it?" I asked. "Think of it? It's the greatest thing ever; you can't believe it; it's too good to be true. Look here, let me show you what I'm already getting every year." It was a nice little sum, \$725 in dividends and profits, outside of wages. He figured it out in my note book with satisfaction. It was evident that he often went over the figures trying to convince himself of their reality. "You can't believe it," he said. "I never heard of such a thing before."

One thing that worries the firm is that the girls do not take to the profit sharing as quickly as the men. There are many satisfactory cases, however. One stenographer, who began in 1897 on \$45 a month, and who now is getting \$100 a month, has accumulated \$25,000.

At the beginning of July, 1916, there were about 2,000 persons in the various plants of Procter & Gamble, holding almost 3,700 shares of its common

stock worth at the present market something over three million dollars.

When this plan has been in operation for 50 years the "wage earner" ought to have a respectable share of the business. At every semi-annual dividend meeting the number of subscribers increases. The personal interest and attention that the heads of the business give to these celebrations always does much to hold and make subscribers. Mr. Cooper Procter, the general manager, Mr. Anderson, and other members of the firm come to Port Ivory, the Staten Island plant of Procter & Gamble, to help in the festivities of these occasions. They go to Kansas City and other points. At Ivorydale everybody from top to bottom and all their relations are present. There is a dinner, an entertainment and a dance for gaiety, and there is the report on the scheme. Without the personal attention given to it the plan would probably not succeed as it does, generous as it is.

It is helped too by the traditional policy of the firm to help those who show themselves willing to help themselves. A young woman in the main office of the firm holding a position of trust and importance told me of her own experience as an illustration of why in her judgment so many "got on" in Procter & Gamble's. "They're so proud of you if you are ambitious," she said, "and they give you so much encouragement." At seventeen this girl was given a place in the factory. She had not only herself to support, but others to help. "I

didn't know much," she said, "but I went to night school, and they were proud of me and because of that they did everything they could to encourage me. They pushed me on from position to position, until finally here I am. Everybody is proud of me because they say I did it, but, of course, it was they who did it."

I doubt very much if their profit sharing could succeed as it is doing if employés did not realise not only that they were being given a chance to acquire an interest in the business, but that the door is always open to higher positions. They see this all around them. Everybody has come up from the bottom; even the Procters and Gambles must learn to make soap if they are to stay in the business. The present general superintendent of the manufacturing plants began as an office boy. The vice-president will tell you that he once handled a shovel. They all have been through it. They've risen as they proved themselves. "It makes you feel like a man," a superintendent told me. All of the men who have risen and all who are acquiring stock are emphatic in their conviction that the policy makes for efficiency. "Do you suppose I'm going to let a new man come in and loaf on his job or that I don't watch the leaks? It's my profits that I'm looking out for now," a man told me.

I would not give the impression that it is a simple matter to acquire stock or reach the top in this business. It is no automatic machine by which men and women are pushed ahead by virtue of so many years

of service regardless of quality and of special efforts. You earn all you get at Procter & Gamble's. You earn it by energy, and ability, and in no other way. The aim is development of individuals, not the creating of an industrial bureaucracy. What you get is your chance and a persistent urging and encouragement to take it, with advice as how to take it. It is the old and tried American scheme for making a man brought up to date. It is doubtful if on the whole the world has yet developed anything better. There seems to be no reason why any healthy business firm with sufficient brains and understanding of and sympathy for men and women should not do what this firm does. But it does take brains, freedom from isms, humanity and a large firm sense of responsibility. It also requires that a firm find more satisfaction in seeing a large number of wage-earners laying away comfortable little fortunes than a few stockholders, themselves included, becoming millionaires.

So far as I know, there is no attempt to meet this obligation of a business through stock ownership, that is, partnerships, which is quite as revolutionary — and adequate — as that which has been in practice for fifteen years in a plant of about one hundred and fifty men at Evansville, Wisconsin, the Baker Manufacturing Company, turning out windmills and gasoline engines.

It is an old plant as things go in Wisconsin, started over forty years ago by five men, each of whom put in \$1,000. The ups and owns of it can-

not be followed here. They were considerable; but by the time the business was twenty-six years old (1899) it had paid-up capital of \$100,000, and a surplus of over \$100,000, and that year paid a special dividend of 10 per cent. in addition to a 6 per cent. dividend which had been paid regularly for six years.

But the mind and the conscience of the company had been at work a long time on other matters than manufacturing. What about the men who made the things from which they received the profits? Were they getting the square deal?

All of the vague questioning and the half thinking on the matter by the builders of the business was stirred and focused in the late nineties by the son of one of the founders. This young man was J. S. Baker. He had had two experiences to make him think: one was a period at the University of Wisconsin, then, as now, fermenting with social discussion; another, a year of sitting in the dark, his only hope of saving his eyes.

"A man thinks when he faces blindness," he says quite simply, and he thought of the whole scheme of things as we have them in industry to-day — and he did not like it.

When his eyes permitted him to return to the business, young Mr. Baker had some ideas on co-operation. He turned them over to the firm, as he turned in the patent of a windmill, and possibly received more consideration for his social ideas because of

the success of his mechanical ones! . The result was a committee for a serious study of profit sharing.

The plan, finally adopted in February, 1899, was radically different from any other, of which I know in this country, in the estimate it puts on the value of a man's services. In the Nelson concern the profit comes as a dividend on the wages, after the regular dividend on the capital, the sinking fund, and other obligations have been paid.

But the Baker Company laid down at the start that profits should be divided between labour and capital in *proportion to the earnings of each*. If a man has \$10,000 in preferred stock of the Baker Manufacturing Company its regular earnings are \$500 a year — dividends on stock are limited to 5 per cent. It is that \$500, not the \$10,000, which decides his proportion of the profits! I, who work at the bench earning on an average \$500 a year, am on a par with the stockholder when it comes to profits, for my \$500, like his, is simply counted as interest on my value. It shows me to be worth \$10,000, since I earn the same amount as his \$10,000!

I would not be considered as worth this, however, until I had been two years in the company; then I would begin to draw my profit, 15 per cent. of which would be paid in cash and 85 per cent. in common stock.

Here is what happened in January, 1900, after the plan had been in operation one year: There was paid on the \$200,000 preferred capital as an

extra dividend \$904.75 in cash and \$5,126.94 in common stock. There were 45 employés qualified to receive the extra wage that year. They drew \$2,129.66 in cash and \$12,068.12 in stock, or about \$47 apiece in money, and \$268.18 in a 5 per cent stock. Ten years later, 1910, there were 106 employés receiving extra wages. They amounted to nearly \$9,150 in cash, and about \$51,840 in stock. By this time, 1910, 3,579 shares of the common stock had been issued, which drew a 5 per cent. cash dividend and did not participate further in the benefits.

From the start it had been realised that if the scheme was to be permanent there must be some means of preventing the stock scattering, some way of drawing back into the treasury what was sold. In 1910 an amendment looking to this was announced. It is as ingenious as the original plan.

Suppose that you had worked with the Baker Manufacturing Company for five years, from 1905 to 1909, and you had averaged \$500 a year. In 1907 you would have begun to share extra wages. These would have amounted to 100 per cent. of your wages in 1907, to 78 per cent. in 1908, to 100 per cent. in 1909. In money you would have been paid in these three years \$208.50 and in stock \$1,181.50.

The company now comes to you with a "purchase contract." Under this you deposit your stock with it, agreeing that if you sell, you sell to the company at the market price. If you leave and go to a competitor, or work independently, you *must* sell your

stock to the company if it wishes to purchase it. But the company has no power to force you to sell if you are put on their retired list. What it does if you retire and wish to sell is gradually to buy back your stock, paying you \$5 on each share for 15 years, when it becomes theirs. The aim of this arrangement is clear. The stock is meant for those who are active in the company, and for them alone.

When the purchase contract was announced an explanation went with it:

Suppose a man begins to work when he is twenty-eight and gets his first stock when he is thirty years old; if for twenty-five years he receives an average of three shares of stock a year he will when he is fifty-five have \$7,500 of stock. If he then retires, his income from the dividends on the stock will be \$375 a year, and from the \$5 a share endorsements it will also be \$375, or a total of \$750 a year. This will continue for fifteen years, or until he is seventy years old, when the endorsements will cease, but the \$375 dividends will continue as long as he lives.

So far the purchase contract has served to meet the end for which it was devised: to keep the stock from scattering; to make the business the property of those who are responsible for its product. The Baker Manufacturing Company is not for the idle, not for the dead, not for the rich. It is for the workers who manage and who man it.

Everybody concerned has not been satisfied with this undertaking. A few years ago an attempt to upset it was made and, as was to be expected, it started from the outside capital. "Certain stock-

holders"—so runs the spirited "official" account of the affair which was printed in one of the local newspapers,—“Certain stockholders in our city went to our men asking their proxies, promising them a 20 per cent. increase in wages and salaries and a sufficient increase in common stock dividend to bring common stock to par, their intention being to knock out profit sharing and the present management.”

The charges which the outside capital brought against the Baker plan were serious. The company, they claimed, paid less wages and earned less on preferred stock than other companies in similar business.

Mr. Baker's analysis of the charge was thorough and convincing. Taking the latest official figures on the windmill and agricultural implement business, those for 1905, he showed that the average wage in the windmill factories was \$503.81. The Baker wage, without profits, was \$561.68. The average salaries in other concerns was \$1,013.53, in theirs, \$970.18. The average product per man in the company was \$2,485.77; in the Baker Company *nearly one thousand more*, or \$3,400.

In 1905 the agricultural implement manufacturers of the company earned about 8 per cent. The Baker Company paid preferred stock (extra dividends included) 9 per cent., and it paid labor 81 per cent. “Why is this?” he asked. “Is it because we are better located? We are not so well located for some trade; we have to pay incoming freight to such an extent that we cannot sell East,

and are handicapped in shipping out by having only one line of railroad.

"Was it because of low taxes? We are assessed in round numbers 70 per cent. of our assessable property; competing manufacturers in this same country are assessed as low as 25 per cent. of their assessable property, and 25 per cent. is more nearly the rule for assessing manufacturers everywhere. *The large dividend was possible principally because our output per man was in the neighbourhood of \$3,400, instead of \$2,500.*

"Many will say they would not suppose there would be such a difference in the output per man in different factories. It is a fact that running most any of our machines one speed and one feed slower than they should be run will nearly cut their output in two, and there are great opportunities for our men to invent ways to save time. They run from one to six machines each, while union men refuse to run more than one.

"The amounts given through profit sharing are, therefore, not due to lower wages or to small earnings for the preferred stock, but to the increased earnings of the men, due to the incentive of profit sharing. Destroy profit sharing and you destroy what is given in profit sharing.

"It is my opinion that factories are like stores and farms: if you want profits you must run them yourselves, and know how to run them. If you lean altogether on hired help you will in most cases lose money."

The opposition seems to have had no adequate reply to the showing Mr. Baker made, for things still go on as they were. Apparently the factory force believe in the undertaking. In 1900, 45 shared in the profits, 20 of whom are still with the concern. In 1905, 63 shared; 32 are still there. In 1910, 106 shared, and 72 are there.

What the Baker plan does is to make partners of all those active in the business. It keeps a business permanently in the hands of those who are actively interested in its stability and its development. It prevents its falling into the hands of dead men or of capitalists. It more nearly approaches the dreams of the syndicalists than any other enterprise of which I know.

There are few businesses which are as yet willing to consider even partial ownership or partnership as a solution of the problem of long service. Those who admit there is a right involved, as a rule fall back upon the easier solution of the pension. Our great corporations are rapidly providing funds for the purpose. The Harvester Company is building up its pension fund by appropriating annually something from its earnings. The Bell Telephone Company in 1913 set aside about \$9,000,000 for pensions and what it calls "disability and death funds." Since 1910 the U. S. Steel Corporation has administered a fund of \$12,000,000, of which Mr. Carnegie gave \$4,000,000. At the end of 1915 it had over three thousand names on the roll. The average amount each received was a little over \$219 a year. Scores of

smaller concerns have provided some form of pension.

But there is an objection to the word. To many minds it conveys the idea of something given, not earned. No permanent good can come in industry from anything which is actuated by charity or patronage. The pension is not a gratuity; it is an obligation. The public policy committee of the National Electric Light Association in a remarkable report made in 1911 has a wise and significant word to say on the subject.

By unanimous vote, the term *Pension*, as being inadequate or subject to wrong interpretation, has been eliminated. We recommend as a substitute *Service Annuity*. Our opinion is that the latter is to be paid as a form of compensation for a definite service that cannot be rightly included within ordinary wages. It is compensation for continuous service over a period of several years, and is to be paid on carefully prearranged and understood conditions.

This is a great admission. At present the important matter is not the machinery, it is not the amount received, it is the recognition of the justice of the principle of giving all who are necessary to an enterprise a share of the returns of that enterprise, in proportion not only to daily but to continued service.

Perhaps, after all, the most important thing about these various undertakings is the proof they give to a cynical world that business is *willing to experiment in justice*, that it is not all "stand pat" in theory and practice; that daily more and more men are saying: Let us bring in everybody. That way lie happiness, stability, and fair play.

CHAPTER X

STEADYING THE JOB

It is stimulating and heartening to watch the effect these efforts I have been describing have on various labour problems. They simplify the stiffest of them. They have already brought out at least two causes of unemployment and shown how they may be weakened if not removed.

The coming of the Great War in 1914 demonstrated tragically how illly we are prepared to cope with disturbances of the labour market. War thrusts a sure lance into a nation's weak spots, be that nation neutral or combatant. Almost as soon as the present war was declared we were face to face with a vast out-of-work throng — true it might be short-lived, but again it might not. The worst of it was we had no plan for handling the situation. If it had been necessary we could have promptly raised an army of a sort in an orderly, well-thought-out fashion. Individuals, States, the Federal Government would have known the immediate and logical steps to take. But when it came to the greatest business of Peace in the time of calamity — keeping men and women at work — nobody knew what to do, unless to contribute to a soup kitchen.

There were employers without a sense that patri-

otism as well as policy demanded that their wheels should run; there were communities that looked apathetically on the closing of factories, as if they had no urgent duty in the matter. States, for the most part, were helpless; so was the Federal Government. It was revealed on the instant that there was in this country no organisation for handling labour. It takes care of itself, groping hither and thither as instinct, rumour, hope, greed may call.

Many men ridicule the idea that it can be scientifically handled. They tell us the unemployed have always been with us, and always must be. It is the oldest reason in the world for tolerating injustice and misery. Unemployment is no more necessary than war. It may be as difficult to overcome, but that is another question. It is no more an untouched problem than is putting an end to war. Nor is it a problem which it takes a war to thrust in our faces. We have it with us more or less all the time, though its exact extent no man can tell. Like many things which the world has agreed must always be with us, it has been thought best to know as little as possible of the unpleasant truths of the unemployed. Figures are loose and disputed. During the painful agitation in New York City in the winter 1914-15 it was claimed that there were 300,000 men and women walking the streets vainly seeking work—but the New York commissioner of labour declared he did not believe there were that many unemployed in the State. In Massachusetts the labour organisations keep the state labour bureau informed of the

percentage of unemployment among their members. At the end of March, 1915, twelve per cent. of the 173,000 members reporting were idle. William Leiserson, the secretary of the Wisconsin free employment offices, said that in the fall of 1914 in that State there were 250 applicants or every 100 jobs. The Charity Organisation Society of Buffalo, New York, declared that there were 10,000 men idle in that town in the spring of 1915; another agency in touch with the situation doubled the number. In Kansas City at the same time twenty-five per cent. of the union men were reported idle.

One of the most careful investigations of the numbers out of work was made in Philadelphia by the Metropolitan Life Insurance Company. The conclusion from their findings was that something over 10 per cent. of labour was idle and about 20 per cent. on part time. This meant about 79,000 in the first class and about 150,000 in the second. These percentages probably held good in all our large cities.

But if we use these figures let it be with discrimination. If there really were 300,000 idle in New York City in that disastrous winter it does not follow that there were 300,000 fit and willing to work who could not find work. A large percentage always of those who are numbered with the unemployed do not belong, strictly speaking, in the problem. There are always a considerable number who detest work and who will not stick to it for longer than a few days at a time. There are the old, the unfit, the un-

trained. These are serious special problems not to be considered here. In New York in the winter of 1914-15 there was a conspicuous group known popularly as the "I Won't Works." They were there to advertise, at the top of their lungs and by all the ingenious tricks they could devise, what a poor stick industry as we know it now is, and to offer a substitute. It was propaganda, and very effective propaganda, the I. W. W. did for their particular panacea; but they could hardly be numbered among the legitimate unemployed.

Another class of unemployed which should be dropped out of the problem — at least as we are considering it here — are those who have pulled up stakes and are seeking to better themselves. New York always has a large contingent of this kind; the new-come immigrant swells it sometimes to huge proportions. In the year ending June, 1914, over 1,218,000 men, women and children migrated to this country. That immigrants to the United States have almost sure chances, history has shown. Our absorption of them is the most amazing phenomenon in the transmigration of peoples. Nevertheless, it invariably requires months, if not years, for each one of these newcomers to find the thing that he best can do. The undigested mass — those who have made their plunge and are still struggling and spluttering on the surface without any idea which way to swim — are not included here in the problem.

Those who really do come under the head are those who having once had a foothold on the labour

ladder, find themselves pushed or forced to jump off. When men and women have once been accepted as useful in the labour market, why are they not kept busy? This is a question that scores of employers as well as public men and students of social conditions have been asking themselves for a long time. Their attempts to answer the question have come to a point where if they do not form a programme at least they form the planks of one. It is the employer who has touched the bottom of this problem. He has discovered two prime causes of unemployment, both of which lie reasonably within his control. The first of these is the floater. It has only been in recent years with the awakening that has come to industrial management that the extent of the floater in industry has been realised. Ten years ago even if you asked the average intelligent employer if he was able to "hold labour," he would tell you, "Why, certainly we hold our people. There's Billy Jones; he was an errand boy for my father fifty years ago, and he's never worked anywhere else. There's Mary — she came in here thirty years ago when she was ten, and she's worked every year since. We wouldn't feel the factory was going if Mary wasn't here."

Tell him you are willing to wager from what you have observed that he hires at least eight hundred a year to keep up his force of one thousand people, and he will call you an uninformed mischief-maker. Challenge him to examine his own employment records, and he will come back crest-fallen and tell you

he wouldn't have believed it. Persuade him to put an expert investigator on his own problem he will be confronted with a state of affairs which will make him, if he is really intelligent, see ruin and disaster dancing like stars before his eyes.

A few years ago the Jeffrey Manufacturing Company of Columbus, Ohio, discovering that it was annually hiring more men than its average force numbered, set out to find if there were others in similar businesses having their experience. Forty letters were sent out. Twenty received answers; and these answers showed that these twenty firms to keep up a force of 44,000 men were actually hiring 69,000 a year.

Four years ago Henry Ford, then employing some 12,000 men, was told by an investigator that he had set loose in his plant to find out what, if anything, was wrong, that he was hiring 60,000 a year. He did not believe it. His partners did not believe it. The general superintendent hotly denied it; but their own figures proved it beyond dispute.

Only a few months ago that conservative body, the National Association of Manufacturers, listened to a paper on floating labour, the result of unusually careful investigation. It showed that in a group of twelve factories perhaps slightly above the average in conditions, it had been necessary to hire 42,571 men to keep up a force which at the beginning of the period considered was 37,274 and which had increased by but 6,697. That is $6\frac{1}{2}$ times as many men were hired as the increase demanded.

Of course a need of more men is not the only legitimate reason for hiring. Groups of human beings are steadily worn down by natural causes as rocks are worn away by wind and weather. Death, long continued illness, temperament, the ups and downs of business cut into them. A constant repairing must go on. Twenty per cent. is the degree of disintegration which experts estimate to be unavoidable under the best possible labour conditions. Yet in the cases above the losses were nearer 80 per cent.

It has not needed argument to convince intelligent employers of the waste in such labour turnovers as these. The money loss that is easily calculable is itself serious. Hiring a man and fitting him into a labour force is an expensive operation. It is not merely the money that the operation of hiring and instructing costs. There is an increased wear and tear of tools and machines. There is a reduced output and there is spoiled work and materials. Those things vary, no doubt, in every trade and every factory. From thirty dollars to two hundred dollars is given by those who have tried to estimate the cost in their particular businesses.

But who shall say what the employer of shifting labour loses through lack of co-operation and that spirit which makes a factory a joy and a pride?

The employer loses, but the man loses more. Constant change makes "getting ahead" impossible. It cuts his yearly earnings so that he cannot keep his family. More families are broken up in our industrial centres through irregular work than

from any other cause. Under the continual influence of change he loses his desire for a settled place, and he has less and less chance of keeping one because whatever skill he possesses at the start rapidly deteriorates. He loses and his trade loses. Moreover the industrial world as a whole suffers, for this shifting of labour is a serious contributing cause to our chronic unemployed problem.

What is behind these shifting wandering labour forces? Can they be stabilised?

In the admirable bulletin on unemployment recently put out by the city of Philadelphia there is a letter published from a textile worker who says that in his time (about twenty-five years, I judge) he has worked in forty different places. "I have never been discharged, always changing with a view to better conditions or because of slack business."

Here you have the essence of the problem extracted from the experience of a man who knew his trade and wanted work, but who had floating labour practically forced upon him. It is "conditions" and slack time which breed floaters. Open-minded forward-looking employers who have tried seriously to build up stable labour have had amazing results by reforming their methods of hiring and handling men. For instance, W. A. Grieves of the Jeffrey Manufacturing Company, who conducted the investigation of floaters referred to above, has with his colleagues worked out a system of handling men which has reduced their labour turn-over by about 60 per cent., an annual saving in the case of this particular shop

of probably \$50,000. If the twenty firms which Mr. Grieves found hiring 69,000 men to keep an average of 44,000 had applied his methods they would have hired only 27,600 and would have saved \$1,760,000. What the 41,400 hired and fired would have been saved no man can compute.

The German-American Button Company of Rochester, New York, claims that in the last few years new methods of handling their force, methods carefully planned and thoroughly and cautiously applied, have reduced what they call the "exchange of employés" 40 per cent. and they expect to reduce it still further. In four years the Joseph Feiss Company of Cleveland reduced its labour turn-over by 80 per cent. These examples might be multiplied many times. Make your conditions right, establish natural human relations, seek for a fair day and a just wage, cultivate co-operation in profits and in management, and your floater settles down. He is getting his chance.

The Philadelphia worker quoted above changed to improve his condition, but he changed probably quite as often because the factory closed down.

There is a general ignorance of the amount of unemployment in the country resulting from short time in mills and factories. In investigating its unemployed in 1915 the city of Philadelphia found that, particularly in the textile and clothing industries of the city, there was an appalling irregularity of work. For instance, the lace weavers have not averaged more than 60 per cent. of time in the last five years.

The carpet mills have lost annually in the last four years something like 20 per cent. of time. The dress goods manufacturers consider 75 per cent. of the year normal. When it came to other industries, the report mentions a large railroad equipment plant that has not averaged more than 50 per cent. of its capacity in the last five years; the dock hands of the city work only about two days a week; and every winter thousands of Italians come back to town from the truck farms in South Jersey. What is true of Philadelphia is true of the country. American textile mills are closed on an average 25 per cent. of the year, book, printing and binding plants 20 to 30 per cent., boot and shoe factories from six to twelve weeks.

The first operation of the old-fashioned employer, face to face with business disturbances and disaster, is to take to cover by shutting down. Just as low wages and long hours have been accepted as the surest way of producing at a low cost, so stopping business entirely in dull or disastrous times has been considered the best economy. The old-fashioned employer not only stopped, but he stopped practically without a warning. All over this country in the fall of 1914 thousands of men and women, living on a moderate weekly wage, learned on Saturday night that they would not be needed for work on Monday morning.

To a modern scientific manager this closing down of a plant is not only brutal from a human standpoint: it is wasteful and disorganising from the eco-

nomic standpoint — the poorest sort of business. A stirring and just arraignment of the policy addressed in 1915 to the receiver of the Wheeling and Lake Erie Railroad Company by Judge John H. Clarke, now of the Supreme Bench, deserves the attention of all employers who think that they can gain by stopping work. This receiver, following the customary policy, had practically closed down nearly all the repair and equipment shops of the company, throwing hundreds of men out of work and practically putting an end to the business activities of two towns. Judge Clarke who had appointed the receiver, in making an inspection of the line, discovered the closed shops. To him this condition was not only bad for the men and the town; it was bad economy for the road.

The result of this policy [he wrote the receiver] is that you have now between 18 per cent. and 20 per cent. of the freight cars of the company so out of repair that they cannot be used, as against a normal percentage in that condition of 2 per cent. to 4 per cent., and about 30 per cent. of the engines are not in condition for use.

You advise me that this policy is adopted to the end that by this rigid economy you may be able to make from the earnings of the lines certain interest payments which fall due in February and March next.

Of course, such practice serves only to postpone the expenditures of money for repairs of cars and engines. It will be necessary to make these repairs

at latest next spring, even if business continues as it now is, and if business should revive to any considerable extent with the cars and engines in the condition which will result, you will not be able to perform the public function which it is the duty of the lines to serve.

In addition to this, such policy must result not only in inconvenience and perhaps suffering to many employés, but it will result also in a disorganisation of your force of machinists, which might prove very serious when business revival comes. The best workmen are most likely to get other employment.

Upon full consideration I have arrived at the conclusion that this policy of extreme economy is neither a wise one economically considered, nor a just one from a social point of view, having regard to the welfare of the men employed, and I therefore write to advise you that you are authorised and directed by this court to employ such repair forces as may be necessary to prevent further accumulation of cars not in condition fit for use, and to reduce the number now out of repair as rapidly as the expense of doing so can be paid from the earnings of the lines.

If business revives at an early date, there will be no difficulty in meeting the fixed charges due in February and March, and if it does not revive, other provisions will have to be made for the making of these payments.

This is a fair statement of the point of view of all scientific managers. A way must be found to keep open. This is of course very difficult in the large

group of industries known as seasonal, but it is in these industries that scientific managers are doing some of their finest and most revolutionary work. Take for instance the problem and the attempts to meet it that are making by the manager of the Plimpton Press at Norwood, Massachusetts, Mr. Henry P. Kendall.

The Plimpton Press publishes school books chiefly. "School book publishers," says Mr. Kendall, "place the bulk of their orders in June, July, and August, with more or less rush work in September. This is due very largely to the fact that school boards make their adoptions for both state, county, and town, in June, for the succeeding school year. The publishers for this reason are unable to anticipate with much accuracy what their requirements will be until they have received word of the adoptions. Furthermore, there is so much red tape connected with state, county, city, and town accounting that the publishers do not receive their money very promptly: and it ties up a very considerable amount of capital to manufacture books and carry them in stock during the dull period, which is December, January, and February, and hold these books for delivery in the summer, to be sold and paid for very late in the following fall."

Here, then, is a condition quite outside of the industry itself making mischief for hundreds of men and women. The Plimpton Press believes this can and should be corrected by those responsible, and is using every effort, financial and otherwise, to get the

publishers dealing with them to anticipate their orders and to make it of financial advantage to them to manufacture as much as possible during the winter or dull months.

Almost every industry has some similar outside condition holding it up in one season, driving it in another to the consequent demoralisation of its force. The Clothcraft Shop of Cleveland, Ohio, for instance, finds that an outside condition which hampers it in its efforts to give regular employment is the practice of many mills of holding up the delivery of orders for cloth for two and three months. This works two evils to the maker of clothes: it prevents proper inspection of the cloth, the manufacturer being forced, if he is to catch the market, to make up what he would otherwise reject, and it forces him to close or work on half time in one month, on overtime others. Mr. Richard Feiss, the manager of the Clothcraft Shop, believes that such a situation could be corrected by the clothiers' trade associations. Their great business, he contends, is to standardise trade conditions. To enable enterprising manufacturers to anticipate a season's demand he would have them establish a standard scale of sizes. Mr. Feiss himself has overcome largely the fluctuation in the trade by pushing a line of staple goods. The factory is kept busy on these many days between seasons, when otherwise it would be idle. This, of course, requires close and intelligent study of the market and complete co-operation between the purchasing, the sales, and the manufacturing depart-

ments, but this is exactly what one gets in a thorough application of the principle of scientific management such as has been made in the Clothcraft Shop.

At the Plimpton Press Mr. Kendall has proved that regular work is much more possible if the worker can do more than one thing: which stands to reason. In the dull months he trains every employé, as far as possible, to do at least one, and, if practical, two other kinds of work of equal grade and in departments which are least likely to be congested at the same time. "This will mean," he says, "if there is a congestion of pasting, we can muster girls from gold-laying, sewing or other kinds of work to the pasting department, so that in this department those who might be short of work at that time will get more steady employment and will have a greater variety to their work."

There are two by-products of this effort which are most valuable: one is showing how the monotony of labour can be broken, and how good and inspiring it is to break it — something the average labourer must learn by experience; the other is the democratisation of labour in the shop. There is no place in the world — outside of diplomatic circles and provincial towns — where caste lines are more severely drawn than among the girls in factories and shops. Treat each task as a skilled operation, train the girl to different tasks and the common contempt for certain forms of work will largely disappear. Mr. Kendall tells me there are girls in the clerical department of the Plimpton Press that gladly take a

machine in dull times. Sometimes he has girls give up their tasks to take machines. Nobody despises any task there for the reason that scientific management has made each respectable.

This variety in labour for which Mr. Kendall strives is a variation of what Henry Ford included in his exciting schemes for improving and regulating the conditions of workingmen in his automobile shop. It will be remembered that Mr. Ford proposed, in case of dull times, to find places on farms for the men laid off. Organised co-operation between manufacturers, farmers, and gardeners is a practical measure capable of absorbing an enormous mass of unemployed. I have seen it practised by individual workers with success. I have in mind a skilled fur worker who for four to five months of the year earns from four to six dollars a day and nothing the rest of the year. He has a large family. Eight years ago he bought an abandoned farm in Connecticut. All year round that farm gives a comfortable, roomy house to his family, fuel, fresh eggs, milk, vegetables, a horse. The children are growing up strong and decent. In dull seasons the fur worker himself is slowly restoring his land and always keeping himself fit.

Manufacturers are usually sceptical about the possibility of distributing through the year the production of an article for which the demand is seasonal and of which competition and fashion force an incessant change of models. This is the production problem of the automobile makers. It has been per-

fectly solved in at least one factory by a thorough application of the principles of scientific management. This factory is that of the Franklin Manufacturing Co. of Syracuse, New York.

Mr. George D. Babcock, the production manager of the company, faced this problem, to state it formally:—"To manufacture large costly units in limited quantity, *the rule of demand for which is affected by the seasons* and the design subject to frequent changes."

Four years ago the firm was employing for a part of the year a large number of men drawn from whatever labour market had them to spare. They might or might not be trained for the task. As soon as the peak began to flatten, the workmen were dismissed. The company did not like it. It was bad for the men, for them, and for the community. Could the peak be cut off permanently and a uniform load of employment be established or, to put it in another way, could they control their output, or should it continue to control them?

They began a scientific analysis of their work, learning what its operations and elements were; and gradually building up from what they had learned they were able to do the thing they had set out to do — eliminate the peak — use practically the same number of men throughout the year. Since the first of July, 1912, Mr. Babcock claims the men employed have been relatively constant, although the cars produced have varied considerably.

Such an achievement is a genuine contribution to

the unemployment problem. What has been done can be done.

One of Mr. Babcock's results is particularly gratifying to those who believe that a more scientific management of the average factory would solve many of the labour difficulties. It has been freely charged by critics of the system that it eliminated the man of fifty or more, that he could not endure its speed and strain. As one of the objects of the system is to fix a reasonable speed and to remove strains, it would seem as if it ought to be the friend of the man of fifty. Mr. Babcock contends that it is.

"I think," he says, "that I am reasonably fair in saying that we have the most completely developed plan of scientific management under the Taylor principles. This has been put into effect with almost no disturbance, either in the product or the relations between our workmen or supervisors. The mere fact that twenty per cent. of a thousand men are over fifty years of age would give some indication of our ability to use all men if they are particularly fitted into plans which have been developed for them. In fact, if we were to take the day's work of a sturdy man in full strength, I am sure we would find fully fifty per cent. of his time spent in doing things that a man sixty-five years of age could as well accomplish. If it be heavy shovelling, it is true that he forces his shovel into the earth, lifts it, but from that point, if it could be functionalised, the older man could easily dump and return it for its next load. A careful study of a large industry will indicate the

possibilities of using men of all ages usefully, and this is especially true where new fresh minds are planning for their tasks."

This experience alone is a signal contribution to the unemployment problem. No one of its distressing features has been more hopeless than that of the old man out of work. Scientific management finds work for the old man.

There are many minor devices practised by enlightened employers to stabilise work. Where the vacation is recognised as an employé's due, it is adjusted so as to help regularise employment. Piling up standard stocks and putting a plant in order may help a little, but they can do but little. A factory frequently must come to short time. There are many experiments making in handling short time to the best advantage. The ideal way is by thorough co-operation of men and managers. If the conditions that make short time necessary are put frankly to a force there is little danger that they will not come up generously and bravely to the need. It is the stupid practice of keeping the force utterly in the dark about the shop, its aims, its successes and failures, that prevents co-operation. Short time is often handled admirably by the labourers. Thus, in the bituminous coal fields it frequently happens that when a mine is closed down the men in the neighbouring mine voluntarily divide their work.

It can be laid down, I think, as a fact, that no employer operating under the new code lays off an employé without proper notice. When legislatures

get around to the point of making this illegal they will find plenty of successful employers to back them up. Mr. Kendall goes further. He thinks it part of his business to aid those whom he has to send away to find other positions. He does this by making it known to competitors and others in the trade that he is glad to supply employés when he can spare them. The Employment Department of the Press also has tried to work out some kind of a reciprocal plan with Filene's Department Store in Boston, by which girls could be taken on as shop girls during the holiday rushes, which as a rule are the dull times of the Plimpton Press.

The Employment Department also arranges that girls who live at home, and are not wholly dependent on what they earn for support, are laid off in preference to girls who are wholly dependent on their own efforts for support, or have others in their family dependent on them. This applies to the men as well. That is, single men are laid off in preference to married men.

Efforts like these of Mr. Kendall may be developed to handle satisfactorily a force of a few hundred; but when it comes to handling the thousands which are thrown into the labour market by the closing of the lumber or the harvesting or ice-cutting seasons, by the failure of great mills, or even by the sudden bottling up of commerce, as happened in 1914, they are utterly inadequate.

Is the employer, then, free of responsibility? He certainly is not under the new code. He now be-

comes a partner in public efforts, which should begin at home. What are these working people? They are the mass of a town's consumers. Turn them out, and houses empty, shops decline or close — the whole machinery of the place begins to rust. It is to the advantage of a town to co-operate in every way with employers to take care of those laid off. Can't be done? It is done; not by "making work," that is, faking tasks, but by considering what necessary public work the town can afford and by making a contract with the idle to undertake it.

Listen to what the town of Duluth did in 1914. Soon after Christmas it found itself with more than a usually large number of unemployed men on hand. They have a commission form of government in Duluth, and the commissioners, being free to do promptly the thing that needed to be done, concluded to test the matter of constructing sewers in the winter instead of in spring and summer, as had always been the practice. The men who were able to do digging were put to work the first of February. Employment was given to all who applied, who were able to do what was considered a day's work. The commissioners were very square with the town, refusing absolutely to take men who were just out of the hospital or those that they found on trial were inefficient. That, they argued, would be charity, and they had no right to assess taxpayers for charity. By the first of June a mile of sewer had been constructed. The work was so satisfactory that it has been decided to continue the sewer construction the

coming winter. And how much Duluth has gained! She has kept a body of consumers, kept her houses full, kept her shops going, kept faith with her own sense of responsibility.

It is idle ever to say there is no work to be done. To such as plead this let me call attention to the case of Pauly of Seattle. The story was told by Pauly himself at the Federal Industrial Commission hearing at Seattle in August, 1914.

Pauly was an unskilled itinerant labourer. When unemployment was at its worst in Seattle, in 1914-15, Pauly organised the unemployed into "The Itinerants' Labour Union" or "The Hoboes' Union of America." He secured an old hospital building, for which the Central Labour Council agreed to pay the rent, and opened it up as a lodging house for the unemployed. The scheme was ridiculed and the building facetiously dubbed "The Hotel de Gink." Pauly was determined, however, in spite of opposition, that he would find a way of tiding these men over. He advertised for work. He sent squads of men to clean up vacant lots. For others he got work at the commission houses, where they sorted potatoes and took in payments "seconds," which the men carried back to their lodgings. He sent out also squads of men to clean up the butcher shops and markets, whenever he found opportunity, and took the second cuts of meat in payment.

In the same way he got the bakeries to supply him with stale bread. Where an old building was being torn down, he got an opportunity to cart off the lum-

ber that was not usable; in this way he supplied the house with fuel during the winter. As soon as it was possible he began to get contracts for clearing stump land. People said that the unemployed did not want work. Pauly sent a gang of men out to clear some land who worked more than a month in the rainy season absolutely without shelter. Pauly would not admit to the place any man who was unwilling to work, and yet in Seattle he cared for more than two thousand men during the winter. There were hold-ups around Seattle, and it was supposed that Pauly's men were implicated, whereupon Pauly showed that his men must be in the house at 10:30, and his books always showed whether they were or not. To make doubly sure, he called in the police without warning, and had them "frisk" every lodger in the building. Not as much as a penknife was found that did not belong there. Pauly had visions of getting his men permanently onto the land. He hoped to get a contract for clearing land, where plots of land might be taken in payment. "That's the thing that will settle this employment question and settle it for all time," he was accustomed to say, but with the coming of better times Pauly's constituents scattered. His experience is valuable as an example of what can be done in times of slack work.

A quick turn in handling unemployment was made in New York City in the fall of 1914 by the women at the head of what is known as the Vacation Committee, an organisation which endeavours to meet various needs of working women. It illustrates ad-

mirably what organisations of all sorts might do to take care of a sudden influx of unemployed. The war threw many women, particularly stenographers, clerks, saleswomen, out of positions. As soon as the Vacation Committee saw the situation it decided to open a free employment bureau. It did not stop to consider how to organise; it simply opened an office; sent letters broadcast among the employers stating that the Committee was going to do what it could to place the women who came to it, and asked co-operation. In the first week it placed 50 out of 150 applicants.

But the sight of so many applicants whom they could not place was too much for the Committee. "Let us give them work," somebody said. "Why not set them to making garments for the wounded soldiers, paying them 50 cents a day until we can find places for them?" This was done almost as quickly as thought of. The girls belonging to the Association who were at work, rallied valiantly to the enterprise, and in their first meeting, after the idea was launched, subscribed thirty-six dollars toward the new undertaking.

But the problem of unemployment, particularly as it stands now, is frequently too great to be handled by the most enlightened employers co-operating with the most willing town. The only agency to which the employers can turn, with any confidence that those he is discharging will be rapidly placed, is the new Free Public Employment Bureau, which is coming into existence. There are too few of them, and in

those which exist the management is often so stupid that they are practically useless. However, Wisconsin furnishes a model. The free bureaus in the Wisconsin States date back several years, but they never amounted to much until Milwaukee employers and authorities took hold of the situation some four years ago, inaugurating a movement in which city, county, employers and employés were represented equally. The upshot of this co-operative movement was that the State joined, in the person of the Industrial Commission.

I spent a half day in the office of the Milwaukee bureau in 1914. It is a big roomy place, a circular desk occupying its centre. Within are the force — men chosen carefully for ability and experience in the work and promoted solely on their record. Without are the unemployed. There were probably two hundred, young and old, waiting that morning. Their faces — eager, hopeful, careless, sullen or resolute, hangdog, stupid, intelligent — banked about the desk were a thrilling sight. As their names were given there was a quick search in the big cabinets which told the history of the bureau's dealings with each applicant, to see whether he had been there before, to find why he was back.

Here is a new man, Olaf Ericsson. The card that the interpreter fills out reads: Twenty-eight years old — speaks no English — strong — clear-eyed — firm-lipped — used to simple living, to the woods, to ice-cutting, to farming, just the man for forest work in Wisconsin. What is there for him?

At a desk within the big circle is the man who is in touch with the employers of the town and the State. Just as these men pour in every morning looking for work, so every morning the employers who use the bureau pour in their requests. There's one in there this morning for sixty men to go to the North Woods. The wages are \$1.65 a day; board is \$4 per week; railroad fare is paid one way. The bureau knows this employer. He keeps his engagement. Will Olaf go? He will. Quickly the clerk fills out the necessary forms for the office record, and as quickly gives Olaf his directions. He also drops into the mail box a post card directed to the lumberman, in which the enclosed form is filled out.

INDUSTRIAL COMMISSION OF WISCONSIN

Free Employment Office

Superior, , 19..

To

In reply to your request for
I am sending you the bearer, M. If
*you hire bearer please sign below and return this card by
mail.*

. Supt.

Applicant has been hired.

Signature

(Reverse)

FREE EMPLOYMENT OFFICE

813 Tower Avenue,

Superior, Wis.

If Olaf reported, and I have no doubt he did, having looked into his eyes, two or three days later the card came back with his new employer's name signed to it.

If the "job" had been in town this last formality would have been conducted by telephone. That is, the employer would have been informed that A—B— was en route, and requested that if he did not appear to inform the office at the end of a short fixed time.

Next: An elderly machinist — experienced, good references, ten years in a Milwaukee concern recently closed down as a result of an overdose of expansion. The failure thrust into the State at least one hundred excellent machinists of different ages. Already the bureau had placed twenty-five in the State. But this man owned his home in Milwaukee. He must wait. "He's been coming daily for a week now," they tell me. "But we are sure to place him here, he is a good man. We've sent him to various shops in the town. It is not his kind who are our problem."

However, here is a problem: one of those who turn up regularly every season, a tramp Jack-of-all-trades. They show me his record, a bunch of cards. It is not an employment bureau that will keep this man out of the labour market. He belongs to quite a different set. There are plenty of these, more than there are of the legitimate unemployed. Mr. Leiserson, the former secretary of the Milwaukee office and the representative there of the Industrial

Commission, says that if there are a hundred jobs for 250 applicants the office does not worry. Why? Because so large is the number of the untrained, the unfit, the lazy, the roving: other agencies must handle these.

The State of Wisconsin now has in operation four free employment offices, including the one at Milwaukee. In the year ending June, 1915, these offices received 52,568 applications for work and 31,095 requests for help from employers. They secured something over 22,000 positions. In the year ending June, 1916, the applications for work were a little less than 50,000, the requests for help something over 50,000, the positions secured 33,234.

There seems to be no reason why every State should not do something of this kind, and at the same time develop such a co-operation between cities, and between cities and country, that the labour market would be under entire control. And if cities and localities within a State can so co-operate, why could not these different States co-operate with a Federal agency acting as a clearing house?

Such an organisation would do away with many of the hardships which come from following rumours of work, as, for instance, at the time of the Panama Exposition, when thousands of men went to San Francisco, on the mere hearsay that the Exposition offered work for all. An official bureau in San Francisco would send broadcast the exact wants of the Exposition, and the national headquarters of labour would spread the facts. This is no dream:

it is but the natural expansion of what Mr. Kendall does when he tries to place labour in Boston; what Duluth does rather than lose its workingmen; what Wisconsin does for the State.

For over twenty years Germany has been handling her labouring men and women in this intelligent and humane fashion. Each state in the empire has fifty or more labour exchanges. Each capital city has an exchange which acts as a clearing house for the provincial exchanges. Between these labour clearing houses in the capital cities there is a steady flow of communication. If a man cannot be placed in his own city he may be in another; if not in his state, then in another. Work is found for him. A million or more men and women are placed every year by this organisation.

An excellent beginning has been made by the Federal Government which eventually will work into something like the German system. In 1907 there was established in connection with the Bureau of Immigration in the Department of Labour what was called a Division of Information. This bureau was intended to aid in distributing aliens through the country. At the end of the first two years, June 30, 1909 it had been able to direct about 5000 workers to places of employment. At the end of the next year, 1910, it actually secured employment for 4300, and gave information to over 18,000. Up to 1914 information had been given to over 108,000 people, but it had no means of knowing how many were really placed. This activity of the

Bureau of Immigration was, by the law, confined to aliens. The farther the work was carried, however, the more deeply the department felt that its aid ought to be extended to all workless and moneyless men. In January, 1915 this power was given to the Department of Labour. "The purpose of the Department of Labour," the new act reads "shall be to foster, promote and develop the welfare of wage earners of the United States, to improve their working conditions, and to advance their opportunities for profitable employment." Under this new power what looks like a very practical organisation is operating. The entire United States has been divided into eighteen distribution zones. Each zone has its headquarters with sub-branches. The last report, made in June 1915, gives 79 distribution offices. The work of these offices is of course to find out what opportunities there are for employment in their territory, to notify headquarters, and to assist in distributing any labour that may be sent to the division. In the first year under the extended power given to the bureau over 90,000 persons applied for information, and nearly 12,000 were directed to employment. It is obvious that with such a beginning as this, and the interest and the intelligence with which the Labour Department is pushing the work, we are coming every day nearer to something like a satisfactory handling of the unemployed.

But let all this be done, and any employer will tell you that still there will be slips. What then is to be

done? That fine and energetic body, the American Association of Labour Legislation, is strong for unemployment insurance. The day is coming when it will be as universal as compensation is rapidly becoming. In scores of industries it has long existed in some form. My own first experience with unemployment insurance was years ago in a mining village of Ohio. I was visiting friends, who were, as so often happened in those days, both farmers and coal operators. A rich vein had been opened under their land. They were mining it, but were loath to give up the life they loved. Every fall the family slaughtered and put down twenty-five or more fat hogs. "What for?" I asked. "To be ready for the shutdown. It always comes. The coal can't be moved. The miners never have anything ahead, or so little it is insufficient. We give them their houses and supply pork, potatoes and apples!" It was not charity in their eyes. It was a form of insurance.

There are many efforts made to prepare employés for the possible rainy day — the dull season — by saving-funds and factory banks. They have a double end: the teaching of thrift and the preparation for trouble. Out of all these experiments there is bound to come some form of unemployment insurance which will be truly co-operative, both in its management, its risks, and its rewards. But, after all, insurance is only a sail to windward — something to which you turn when everything else has failed. It is like the rescue squad in the mine. Use it when you must, but — I heard this from the lips of Thomas

Lynch, leader in safety work in mines, "To — with rescue work. *Prevent accidents.*"

Keep the wheels moving! That is the great responsibility of those who presume to employ. It is not less a responsibility than for the banker to keep his doors open. To co-operate with the employer in this work is the duty of the community, of the State, of the Federal Government.

We must organise men and women for labour as for war. Watch the perfection of the training and the movement of the masses that at this moment are meeting in unspeakable, infernal slaughter in Europe. See how the humblest is fitted to his task. With what ease great bodies wheel, turn, advance, retreat. Consider how, after standing men in line that they may be knocked to pieces, they promptly and scientifically collect such as have escaped, both friend and foe, and (oh, amazing and heart-breaking human logic!) under the safe sign of the cross, tenderly nurse them back to health.

If this can be done for War, should we do less for Peace?

CHAPTER XI

THE FACTORY AS A SCHOOL

The last word on which an observer of the undertakings I have been reporting falls back, if he is candid and free of theory, is pretty sure to be education. This is teaching. This shop is a school and a mighty practical one. It takes the man or woman where he is and gives him what he needs, whether that be training in keeping clean, in taking care of wounds even as slight as needle pricks, in the joy of games, in the wisdom of thrift, or in the possibility of improving in his trade. It is a system which is particularly valuable to two great classes of labour untouched by any existing agencies, the crowds of young people who come into the factory undisciplined and untrained, and the masses of adult labourers to whom from a variety of causes life and labour have become dull and joyless.

Both the safety and health movements illustrate the kind of education men get from these undertakings. It was pointed out in the chapter on Safety how large a percentage of its success depends upon training. The manager is after safety, but in order to get this he must stimulate a faculty which our present educational system often leaves undeveloped, and that is attention. Improbable as it may seem, it is a

fact which every analysis of factory accidents supports, that the average workman gives almost no heed to the condition of the tools, the machinery and the material he handles. The first undertaking of an intelligent safety programme is to arouse men's attention, and once this is done, the intellectual effect is striking. The man who comes to see dangers almost invariably comes to exercise his mind over prevention. All up and down the shop one will find men studying how something which has impressed them as unsafe can be remedied. Minds which were practically torpid throughout the day's work spring into activity. In many big mills it is the custom to ask analyses of accidents which have happened and suggestions for preventing a repetition. Answers are freely turned in, some of them most ingenious. A mind which has once begun to act on any particular kind of problem does not stop there. It goes on exercising itself on other problems.

In more than one industrial community the social value of the safety work in the factory has been demonstrated. The man who has formed the habit of noticing possible causes of accidents and inventing ways of removing them becomes a kind of safety policeman in the streets, on the cars and in his home. I have noticed again and again in the vicinity of big mills where safety had been thoroughly installed the care of the men about the street cars, their rough but kindly warnings and instructions to women and children. The whole community was safer because of what they had learned. They had come to under-

stand that recklessness and indifference to dangers, big and little, are a cheap and foolish business. They had been taught to see that it was not they alone who might be injured by carelessness: it was the other fellow. A man thus awakened is not only a better workman, but he is a better citizen. In thousands of cases it is improbable that any of the forces at present working on the man could have so educated him to a feeling of individual responsibility about others both in and out of the factory as this safety work has done.

The effect on the city, on the home and on the community of the factory health movement is obvious wherever it has been developed. Cleanliness as a desirable habit of life is fixed in hundreds and hundreds of minds that never before had considered it either as desirable or possible. A few months ago I waited for a train in a steel town near Pittsburgh at the closing hour when hundreds upon hundreds of men were pouring out of a mill across the tracks from the station. In other years I had often watched the same exodus and had found it hard to believe that the black, greasy, tired and slouchy individuals could after all be quite like men in other walks of life. The change in the look of the workmen that I watched last summer was almost unbelievable. This particular factory was one in which both proper bathing facilities and lockers had been installed, as they have in so many of the new workshops. At least a thousand men passed under my eye that night and I saw only one who was not clean in flesh and clothes.

Not only the difference in their looks, but the difference in their attitude toward other people, towards life in general was surprising. They were not ashamed to sit down beside anybody. The skilled working man who comes dirty and greasy into a street car feels a little out of temper with himself and the world, because of the contrast into which he is thrown by his condition, something which it was impossible in the old shops to prevent. Not one of these men that I watched coming out of the mill need to have been or was ashamed to sit beside any man or woman of any class. They were as fine, stalwart and intelligent a looking body as one would often see. Their cleanliness helped their own self-respect and it prevented the man and woman whose occupation requires or at least does not prevent im-maculateness from drawing aside.

This cleanliness naturally spreads into the home. There is no factory service worker or physician, no observer of the change that is coming over industry who does not know what effect the gospel of cleanliness is having on home conditions. It is of course no easy task to bring a big body of working people to whom cleanliness and order have never been taught to an entire reconstruction of their habits. The difficulty with bodies of untrained girls is often very great. Their untidy habits, not only in the factory, but in the toilet room and yards of the factory are well known to those who work among them. It takes patience and tact to reform them. It is even

difficult to persuade them to wear cheerfully the cap and apron in employments where there is dust. I have known girls to leave because they were ordered to wear caps, although it was plainly to their interest. One of the cleverest solutions of the subject that I have run across was in the admirably managed Scott paper factory near Philadelphia. In this factory the fore-woman offered a prize for the most becoming pattern of cap and apron. The moment that the question of looks was introduced the girls were interested. They have worked out a most effective combination in form and colour. They are protected in their work and as a group of workers are thoroughly attractive. Perhaps nothing so takes away from the beauty of a group of women as the lack of any kind of harmony or plan in their dress. One is never more conscious of this than when he sees a group in a becoming uniform. The girls sense this and make the most of their regalia. From attention to cleanliness in person there has come in the Scott factory to be a real rivalry in the prevention of litter in and about machines. At the same time the girls are taking pride in their lunch and rest room. It had been a bare place, furnished only with necessaries, but with flowers and with an abundance of attractive paper which the concern makes, they have turned it into a gay and convenient sitting room. They have had an education in the value of order, harmony and appropriateness which cannot but follow them into the street and home.

They are more highly developed young women because of their factory training.

A touching change comes over the lives of many men and women, particularly those that are young, from the training for social life and healthy amusements which the factory often gives. They are literally taught how to play, to use a vacation, to be sociable. For one reason or another thousands of workers live joyless and lonely lives. They have not the education, time, self-direction, money and strength to seek opportunities for social life. If they are to have this salt to their daily labour they must be taught to desire it and shown where to find it. Now this is a delicate and slow task. Many employers cannot realise that the use of athletic fields, lunch rooms, clubhouses, means a radical change in the habits of their employés. If it has been the practice to eat lunch off the corner of one's machine it will be a wrench to eat from a table in a spick and span restaurant.

I remember one big New England factory which several years ago built a fine clubhouse with ample accommodations for every man and woman in it. The majority had come to use it after several years, but always there were men scattered through the factory eating from a corner of a machine on stormy days, on steps or lawn outside on a sunny one. There were others who patronised the lunch wagon which daily drove into the premises at noon. These were the non-clubbable fellows, who wanted to be let

alone, or those who hated cleaning up, or those who were shy. The management had had the good sense to leave each man to his own way. The steady, if slow, increase in the numbers who used the lunch-room was their reward.

It cannot be too often repeated that all of these undertakings must be allowed to grow, that they are to succeed only through education. Their failure usually comes from an attempt to impose them full size, not plant them, and wait. Men of fine intention and impatient zeal visit a great industrial estate like that of the Cadburys' in England. They find athletic clubs for both men and women, self-directed and largely self-supporting, working enthusiastically and regularly. They see the dinner hour and Saturday half-holiday utilised to the full for sports of every possible nature. They find club-rooms occupied, the library books in wide circulation, indoor games popular, the summer holidays fully anticipated.

They look over the equipment, athletic field, club-house, tennis grounds, study the rules and regulations, and go home confident that by another summer they will have in their smaller group a fair reproduction of the Cadbury social and recreation life. They put up the machinery and their people regard it with apathy or contempt. What they do not sense is that it has taken the Cadburys fifty or more years to do what they have done at Bournesville. They have built it as they have built their markets, slowly and thoroughly. It has been an evolution, as social life

must always be, and that our eager and hasty American can neither understand nor abide. His motto is "Do it." That is sufficient for a machine — but not for a man. *Teach it* is the only way for him.

The most solid, definite and far-reaching training which the worker gets to-day in industry seems to me to come through scientific management. From the standpoint of society this education is probably the greatest of the system's many contributions. It reaches the two classes which need it most — the unskilled worker, man and woman and the skilled worker, grown automatic if not torpid. It reaches them where they live. It is education while they work.

Of all the evil features of industry to-day, one of the most evil is unskilled work, the necessary tasks which are really despised. Hundreds of thousands of men and women do things essential to our very existence, and we and they consider them menial; moreover, we cannot conceive that they can be dignified. What scientific management proposes is to make all tasks skilled in a sense, that is, set a standard of performance and teach it to men.

It has done this already for a variety of operations which it has been the habit to leave to the untrained individual. Mr. Taylor in developing his "Law of Heavy Labour" has shown how what is akin to a trade may be made of loading iron rails and shovelling heavy substances. Carrying and laying bricks, loading and wheeling barrows and many other similar tasks have been so developed that men can be

trained to do them properly. One has only to compare a gang of men shovelling snow in a city street, most of them unfitted for the work, their tools unfitted to them, no standard of production required, with a gang of shovellers trained and equipped for the job, to realise how wretched and inhuman and unskilled work can be, and realising this one cannot be too strong an advocate of a system which makes it possible to take the curse out of all heavy work. True there are those who oppose the idea. Standardise unskilled tasks and teach them to men, they say, and what is to become of the unskilled labourer? The questioner does not see that the elimination of unskilled work means the elimination of the unskilled worker, nor does the mind which sees no world difference from this as possible admit such a result, and yet this is what scientific management in its ideal application means. It proposes to develop all men so that they may do something well; to rid the world of menial tasks; to make all work worth doing.

It is good indeed to see what scientific management does for the untrained girl who seeks work in factory or shop. How does she learn her task in the old-fashioned shop? The probability is that she has never before been within factory walls, never before has seen the machine she is to feed or run. A driven foreman may give her five minutes at the start — more likely he will tell her to watch her neighbour. That is, she is to pick up the work as best she can. Often the neighbour is unfriendly. She resents the watching. She refuses to answer the

newcomer's questions. Again and again she is malicious, hindering, jeering.

The new girl who "spoils work" drives a needle through her finger, goes away crying, never to return, is the girl who swells the flood of "floaters," which are so discouraging a feature to those who conduct big enterprises requiring large numbers of girls. She is practically eliminated by the new methods. In a shop run according to scientific principles, a new girl is put under the care of the instructor at the start, and the instructor spends at least the first day at her side. She is taught her machine, shown how to follow her instruction card. She is made to understand that the instructor is there to teach and help her. The stimulus of this no one can doubt. Not only the advantage to both girl and shop, but the superior humanity over the old brutal way of throwing her in and letting her swim out cannot be questioned.

This training makes her realise that her employer thinks what she is doing is worth teaching and worth watching. She is doing something important. The old method was calculated before all else to make a worker despise her task, to discourage interest in it. Why should she study it if nobody thought enough of it to teach her? That was her unconscious argument. We complain because the unskilled girl has no interest in her work. Why should she have, when apparently nobody else has?

Moreover, the thing she does often has no meaning for her. She twists a foolish little wire, folds a bit of pasteboard, stitches endless seams, clips

ravellings. She does not see her operation in its relations to the dozens of other equally trivial operations that, fitted together, make a useful whole. I have often talked with girls who had not the least idea where and how the things they made day after day was used. How can a worker be interested under these circumstances? Introduce them properly to the factory, explain it to them as a whole, and their attitude of mind is at once changed. There is a Westinghouse factory in Milwaukee where the manager arranges that each girl before she goes to work be conducted over the entire plant and be shown all of the various operations in their proper sequence. When she finally is put at a machine she ought to know exactly the relation of her task to the finished product. She is making something worth while, a part of a great national article. She is a servant of society. There may be girls too dull to feel this, but not many.

I shall never forget the pride with which two girls in the cotton factory referred to in Chapter VIII, a factory in which quality and pride in quality are carefully cultivated, told me that the cloth they were weaving was for the sails of a cup defender! They saw themselves as related to a great national event, in which everybody was interested, and if the boat carrying the sail they had woven should win! The builder himself would scarcely have been prouder.

A plant in which this pride in product reaches down to even the humblest worker is that of the Commonwealth Steel Company at Granite City,

Illinois. The concern makes a steel frame used to protect the ends of passenger cars. It has been proved again and again, in case of collision, that these frames prevent the cars crumpling. Battered examples that have been through terrible accidents are shown in the yards, and the pride of everybody in the works in the service that this product of their hands has given is real and beautiful. The errand boy in the office, the president of the concern, the waiter in the shop restaurant, the foundryman, all tell you with equal exultation, "This is what we make here, something that serves men and women, saves lives, and prevents sorrow."

This pride in product is skilfully and constantly fostered in this extraordinary plant. Through the *Commonwealther*, an unusually lively little factory paper, everybody learns just how the things they are making are serving the world. It is impossible that the most disgruntled labourer should not be more or less heartened by having it put to him persistently that he is concerned in making something which is good for men and women.

A factory bulletin like the *Commonwealther* can, if it will, do substantial work in educating a force in their particular craft. This is being done well by the organ of the American Rolling Mills Company at Middletown, Ohio, the *Armco Bulletin*, as it is called, a handsome little periodical, surprisingly well edited. *Armco* publishes every now and then articles on the processes and the history of iron and steel. The men learn through it more than most of

them ever dreamed there was to know about the industry with which they are connected. Again in the chief plant of this concern at Middletown the men in entering pass daily in front of a finely equipped laboratory. They know the people that are experimenting there. They learn more or less about the new developments. The whole effect of this is to open to them a side of the industry which is a sealed book to most workers.

The *Armco Bulletin* does not by any means confine itself to concerns directly relating to the trade. It does a great deal to encourage the outside interests of the workers. In the last year they have been running a series of amateur photographs, some of them unusually beautiful, made by men in various departments. The fostering of rivalry in a taste of this sort is altogether good. Many of the *Bulletin's* articles are contributed by people in the force. Of course all of this is the best kind of education. It enlivens minds which are always in danger of becoming dulled by hard labour in which there is little variety.

One of the most stimulating features of scientific management has always been the encouragement of suggestions. The management says to workers, "If you can tell us how to improve anything about this plant, we will listen to you, and if what you have to say turns out to be practical, you shall have pay for your idea. These ideas are not by any means confined to suggestions for improvements in machines, they include better methods of doing anything and

everything in the carrying on of the work. In many shops I have seen suggestion boxes into which the worker could drop his suggestion. It is soon discovered by managers who cultivate this feature that untrained workers make a large percentage of impractical and foolish suggestions, that is, they do not know how to suggest. I have not found any plant in which this work, so important for the worker, was carried on more intelligently than in the German-American Button Company of Rochester, New York. The point to which they have carried their work is clearly set out in an issue of their factory paper, *Art in Buttons*, devoted to the suggestion system. The following article makes very plain the educational value of the plan.

The company's action in installing the suggestion system was prompted by two motives, the obvious one of course being to obtain greater efficiency throughout the plant, by getting the ideas of all thoughtful employés.

The other motive, however, is of equal importance, although it is very frequently overlooked by the average suggester; and that is, the opportunity which the suggestion system gives every worker to prove to his head or foreman that he is worthy of promotion. This is perhaps the chief value of the entire plan, since in this way it has become possible to place in positions of responsibility those men who are best equipped to fill them.

Whenever a suggestion describes in detail conditions which need improvement, and then sketches a carefully thought out remedy, it is always regarded as proof that the signer deserves consideration for advancement, so that every ambitious em-

ployé has a chance to make his ability count. A good suggestion singles out the wide-awake man from his fellow-workmen who take no interest in suggestions and who give little thought to the problems of their department; so get busy and use your head if you want to win out.

No matter whether you already have the suggestion habit, or whether you are just going to get it, remember this second object of the suggestion system — the *expression of individual ability*. With this in mind, you are sure to submit suggestions which will be a real credit to you, instead of trifling matters which should be brought to the attention of your foreman.

The ideal suggestion should present a carefully worked out and logical attempt to solve some really serious problem which confronts the company, be it large or small. This does not mean that suggestions about more trivial matters are undesirable, but those of the first class are the natural product of a mind capable of carrying responsibility. Remember also that every thoughtful suggestion counts in your favour, and try for quality rather than quantity.

Occasionally suggestions are submitted bearing the signatures of two employés, who thus show that they have lost sight of the chief purpose of the suggestion system — the recognition of individual ability. By submitting a plan together, they have practically eliminated the personal value which their suggestion should have had, and each signature neutralises the value which might have been obtained by the one signer. This result is manifestly unfair to both suggesters, for several reasons:

(1) Each idea must have originated in the mind of a single employé and should be submitted by that person alone.

(2) The practice of having two employés sign the same

suggestion does not do justice to the originality of the one in whose mind the idea was first conceived.

(3) Moreover, there is danger of giving the impression that one or the other didn't know how to put the idea across alone, or else that he is the type of man who is unable to carry a thing through by himself and who could not make good in a more important position.

(4) This does not promote independence of thought, which is a fundamental requirement for any person who expects eventually to obtain a position of responsibility.

For your own interest it is therefore very important that you work out each suggestion alone, so that it will represent your own efforts, and show independent thought. When you have a good idea, work it out for yourself and submit it with *just one name at the bottom*, and thus "Look Out for No. 1."

While the educational value of such a system as this article outlines is obvious, the financial value is probably the thing which has the most effect upon the worker, for it is the policy of scientific management to accept no suggestions without giving some kind of award.

It is difficult of course to fix this award justly. I once heard a safety expert of a great plant tell of giving \$75 to a worker for a suggestion which he said was saving the firm \$2,000 a year. The man said very frankly, "The man himself, a foreigner who could speak very little English, was highly gratified; but I felt as if I were robbing him"; and his feeling was just. So far as I know the most nearly just solution of this difficult problem of

awards for suggestions has been reached by Mr. Babcock of the Franklin Manufacturing Company of Syracuse.

It is quite wonderful to see a shop group coming to life under the stimulus of these various undertakings. Awaken a man to the possibility of better health, arouse him to a sense of his part in safety work, persuade him to try his head on suggestions, and the chances are that you drive him out of the blind alley where he has been trapped and start him on an open and upward road. He feels his untouched power and often unconsciously uses it. The problem of finding material fit and willing for the various places of responsibility which even the old-fashioned management demands has grown more and more difficult in these later years. The head of the great Warner Corset Company of Bridgeport, Connecticut, an employer of some seven or eight thousand people, says that while ten years ago they filled all of their advanced shop positions and frequently those of the office from the floor, it is now almost always necessary to go outside for executive and clerical help, that is the rank and file remain rank and file. The river of democracy has ceased to flow freely in many an industry. Men and women settle in the brackish waters of caste. The lack of free communication between management and floor, the suspicion and dislike that inevitably comes between human beings when they must work at a common enterprise without means of free and democratic intercourse, have been largely responsible for the rise of our industrial caste

system. Out of very loyalty to their fellows many men and women unorganised as well as organised will not try to rise to positions where they will be "over" those whom they have been "with." It is a deplorable attitude in any group and where it exists the thing we call Democracy is impossible. Democracy demands the freest intercourse and the coming to the top of the fittest.

An undertaking which arouses a general interest and sets people to acting together unconsciously is a first step towards breaking up the caste system and releasing aptitudes and talents. Factory games and clubs not infrequently bring out organising and executive ability which an alert manager will seize upon. The ability to lead and direct has been largely cultivated on the railroads and in the Steel Corporation by the safety organisation. If a man is successful as a member of a small safety committee he may be successful in a shop position. In three years 13,757 different men in the Steel Corporation have served on committees. No one can tell what effect the experience may have on these men. It would be strange indeed if a per cent. of them did not seek channels where they could further exercise their newly discovered powers. That is the way Talent in men operates.

The tendency of all these undertakings is to open and to encourage workers to batter down the blind alleys which trap so many. This is particularly true under scientific management. Indeed one of its objects is to push men ahead. It must do that if it is

to fill the new positions the system creates. There must be men to do the planning and routing of work, something formerly left largely to chance. There must be others to take care of and distribute tools and supplies. There must be a force to study the tasks and instruct operatives. There must be foremen and assistants for each of the new departments created. This managing force gives the time to find out how work can be best done and seeing that it is so done. Before the introduction of scientific management in the Cloth-craft Shop of Cleveland there were 13 persons in the management. There are 107 now. With four or five exceptions these 107 people have been taken from hand work or machine work positions in the factory. In the case of the four or five it was necessary to go outside in order to get some special equipment. Generally speaking they believe at this shop that hand and machine work are the best kind of preliminary training for people who have the capacity to fill executive positions. A man holds three positions under this system, I have heard experts say: the one he left and on which he is keeping an eye to see that his successor is working properly, the one he fills, the one to which he hopes to be promoted. There are fewer people at manual labour because there are more at mental labour. C. Bertrand Thompson, an expert who has had much experience in factory re-organisation, says that he has found that "Labourers may easily become truckmen. Truckmen may at a pinch attend the simpler automatic machines. Ma-

chine tenders are easily made into helpers, and helpers into skilled artisans. The class of foremen and clerks is almost invariably recruited in scientific management plants from the better men in the lower grades of labour."

The amount of new work created by the system does not by any means rest here. The improved man requires an improved tool, an improved chair. From every side the incentive to develop new things comes. When Mr. Taylor proved that it paid to give each shoveller in his gang a shovel fitted in weight and length of handle to the man's reach and strength, he gave an enormous stimulus to the shovel business, that is, set more men at work making shovels. There has never been a shop put under the system that streams of new and unexpected demands did not flow from it.

There are those who claim that all the advantages that scientific management of an industry may bring to workers it is in the long run an injury because they turn out so much more, they are bound to exhaust the demand and put themselves out of work. This is one of labour's chief objections to the system. It is the fear of abundance; a fear that labour has caught from capital, and which has set them both at the most pernicious economic practise men ever devised — that of keeping things scarce that their price might be high. Labour has learned from capital to fear what it calls "too much."

To capital abundance means cheapness and commonness; to the workman, a shut-down; so the capi-

talistic fruit grower dumps his apples into the river if he sees the market so stocked that plenty of apples may be within the reach of the thousands. The commission merchant puts his eggs into cold storage for higher prices — and the tenements go without eggs. The oil trust, the beef trust — all our monopolistic friends hate and fear abundance. They agree with the high tariff senator of a Western State who once told the United States Senate that he hoped to see the day when the wheat crop would always be a little shorter than the demand, that the farmer might always get a high price — and the poor man a small loaf, he should have been told.

The workingman has held the same notion. He keeps his daily output down insisting on an average wage for all, and in doing this he honestly believes he serves himself and his fellows.

What he is learning from scientific management is that *work breeds work*, that the more that is done the more there is to do, that is, these new methods of managing plants are educating the workingman as well as the employers in sounder economic notions. They are seeing more and more clearly that in curtailing work they are curtailing the power of consumption. The more work men do, the more they have to spend; and the more they have to spend, the greater is the demand for the things all men make.

The training in co-operation which these new factory methods gives must I think be counted as one of their finest educational contributions. Genuine co-operation has always been difficult for men and

women. Their ignorance, stubbornness, pride, greed, suspicion, hamper it. Everything in which a group succeeds in acting collectively strengthens the desire for and points the way to co-operation. The safety crusade is a big co-operative enterprise, so is the national handling of the unemployed, so is the fight for national health. They are allies of the higher peaceful unionism of which every intelligent workman with any vision of the future dreams. Nevertheless, none of these undertakings get very hearty support from organised labour. They seem to feel that betterment which come from free co-operation of employer with employés are less permanent and less just than those which come from collective bargaining through the unions. Also they fear that they are as genuine as they often are, mainly because the employer thinks he can in this way keep unionism out of his shop. If he gives all and more of the benefits which the union exists to secure, the worker feeling no need will not seek the union protection. My own observation has been that it is efficiency and stability chiefly if not entirely that the employer seeks when he undertakes to put his shop on a modern basis. He often gives shorter hours than the union demands because he finds by experiment that they are better for the health and therefore for the productivity of the worker. He works out a wage scale which is higher than that of the union because by so doing he stimulates the worker. He goes to great pains to improve conditions because he has found that healthy happy growing men and

women are better workers. He interests these men and women in the industry and often he helps them to become stock-holders, because he has discovered it is better for the business that he should do so. He constantly stimulates their ambition teaching them how to increase their skill, and so their earnings, opening new positions to them and helping them to fit themselves to fill them; and to do these things he must secure the fullest co-operation of the employé.

There is an important point involved here which union men should not shirk. Any system or practice which depends upon a high degree of co-operation for success is the ally of intelligent unionism — not, perhaps, of that unionism which is concerned with politics, which is opportunism in spirit and military in method, but with the unionism of the great mass of workers who believe in sound practices, peaceful progress and, if possible, friendly relations with all those concerned in their industry. The head of the American Federation of Labour, Mr. Samuel Gompers, made a wise comment recently on the organisation of labour that has been worked out in the Colorado Fuel and Iron Company. That organisation was formed unquestionably to head off unionism, though it is proposed by its aid to improve conditions in the company, and to right some old and terrible wrongs. Mr. Gompers could not be expected to be friendly to such an undertaking, yet he is wise enough to see and just enough to say that in the long run this organisation must help rather than hinder unionism.

"The miners employed by the Colorado Fuel and Iron Company," says Mr. Gompers, "have been whipped by means of atrocious brutality and hunger into submission, back to the mines. And these miners have been formed into a union by Mr. Rockefeller's benevolent altruism. But he has organised them, and for that at any rate labour is truly grateful, for when men come together to discuss, even in the most cursory way, their rights and their interests and welfare, there is afforded a splendid field for development and opportunity."

Nothing can be truer. The day must come it seems to me, when organised labour will look on scientific management as one of its strongest allies, because it is a system which depends first and last upon co-operative action. The first time I visited a shop under the system I was bewildered by an impression which I could only describe as free circulation. The workers, from the head man in the head office to the last man in the yard, seemed to be moving in the same current, striking on the same key. I saw what I never had seen before, workingmen in blue overalls and smutty faces boldly walking into the offices to consult with the men who had made their blue prints, worked out their instructions and set their task and bonus. I saw men in smart business suits going about in the shop, and no more attention given them than if they wore the shop regalia. Every one seemed in consultation. As I learned more of the system I discovered that this was literally true. The plan takes in everybody. It depends on taking in

everybody. It will not work properly if any one holds back.

To educate a force of 500, 800, 1,000 men and women to this idea and to its realisation, is slow and sometimes painful. It can be done only by repeated experiment and explanation. As fine an educational enterprise as now exists for workingmen is the weekly open-shop meeting that many efficiency engineers carry on when they are converting a shop. I have rarely been more interested than in one of these meetings I attended in Providence, Rhode Island. There were men from the foundry, the machine shop, and the office present. The engineer was there, and so was the president of the company. For two hours they discussed the new system in the most independent way. The day following I asked a man in the shop whom I had seen there what he thought of it all. "I don't understand it very well,—none of the boys do, and we think we ought to watch it and we are,—but I think it's the real thing."

"Why?" I asked.

"Well," he said, "these are the only shop meetings I ever heard of where the man at the bench and the president of the company have the same kind of chair to sit on and the same kind of cigar to smoke."

Those who believe that scientific management holds benefits particularly for the working class are those upon whom the burden of proof is thrown. They are the educated, the leaders, the superior by training and opportunity. They cannot be too pa-

tient, too reasonable, too willing to discuss even those things they know are facts and as little to be influenced by discussion as the multiplication table. If we had never heard of the multiplication table until now we certainly would have to spend much time in proving it. The leaders in this movement are seeing this, and many of them are devoting time and strength to explanation which must seem like explaining the rules of arithmetic.

One of the most sportsmanlike exhibits the country ever saw was Mr. Taylor's willingness to subject himself to the heckling and the badgering of labour leaders, congressmen, and investigators of all degrees of misunderstanding, suspicion and ill will. To a man of his temperament and highly trained intellect, who had given a quarter of a century of the hardest kind of toil to develop useful truths, the kind of questioning to which he was sometimes subjected must have been maddening. But although he often used strong language he never gave up, and he continually learned.

There are not a few of his younger followers who on this point of the relations of unionism to scientific management are sensible and liberal. They see the difficulty, but they believe that by experiment and good will it can be adjusted.

But to adjust requires, as do all of these undertakings, an entirely new attitude of mind toward labour and its problems. All over the country this attitude of mind is forming and expanding. We

have a new kind of leadership in industry, a new executive whose point of view, method and ambition are diametrically opposed to those of our old executive, and it is upon him the immediate future of industry in this country depends.

CHAPTER XII

OUR NEW INDUSTRIAL LEADER

The code, the theory and the attitude of mind of the employer who brings any one or all of these undertakings to the paying point; that is, makes them work so well that he considers them indispensable, in managing his business, is in sharpest contrast to the code, the theory and the attitude of mind of the old-school employer.

We know fairly well what this type preaches and practises. His concern is with the machinery of business, not with the human beings who operate that machinery. They must look out for themselves. If they contract occupational diseases, it is their lookout. If they are hurt, it is also their lookout. If the hours are long and the wages low they are free to leave. If they put in suggestions which help the business but not them that is their bad luck. Briefly his creed is "Humanity has nothing to do with business."

The employer of the new school disputes every point of the old creed. Wherever you find this new executive you find him enormously interested in the human material. He believes it is all capable of some use and that is his responsibility to use it. He does not even despise the sub-

normal, indeed there is nothing which better emphasises the attitude of mind of the new executive than the trouble he is willing to take with this class. He has proved again and again under scientific management that those who are "not all there" can do certain kinds of work *more* efficiently than it is done by the "bright." They will not go ahead, but they will be happy and useful in the operation which fits them. Whatever the quality of the human material he deals with he endeavours to discover what it can do best. In this delicate task he no more despises anything which promises to help him than he despises any possible drink-cure.

What he asks is, "Are there other ways of finding out what a man is fitted for than the old way of setting him at a task and seeing what happens? Are there other ways of spotting an engineer, an executive, an artist, than trying the man at trade or art? He has his own ways of judging men — born of experience, observation and reflection. Are there tests which will automatically settle the matter and relieve him of his errors or even reduce the percentage of his errors? He has opened his mind to proof, and the phrenologist and psychologists are busily trying to convince him. I have seen labour forces replenished solely on the height and depth of the forehead, the colour of the eye, the shape of the nose, the curve of the chin; and I have never heard more enthusiastic and confident claims than from the advocates of the system. What is there in it?

We have an authoritative answer from one of the

most trustworthy sources in the country — Dean Schneider of the College of Engineering of the University of Cincinnati. Co-operation between college and shops in the education of young men has been carried on in Cincinnati for several years under Dean Schneider's direction. It has been, of course, a nice problem to select men for different kinds of work. Was any help to be obtained from those who claim that aptitude and ability are shown in physical characteristics? These claims were put to the test by the faculty interested. For instance, it is declared that a certain shaped head means a directive money-making executive. I once knew an employer to haul from a group of entirely uneducated applicants a man with this particular shaped head and make a place in his counting room for him. A great executive should not be lost to his business, he said.

Mr. Schneider picked out at random a number of well-known money-making executives, and had their physical characteristics charted. He found they did not conform to any law. After full tests of the methods and principles of this school, he says:

"We were forced to the conclusion that this system was not reliable."

Are the claims of the psychologists any more reliable? Can they, as a few have claimed, decide in a laboratory what a man is and is not good for? Do their tests prove your normality, your ability, your character? Dean Schneider and his colleagues have been testing those claims. Selecting men from two classes of graduates — men who had been with them

five years, and whose work since leaving college they had followed so that they felt they knew something of their abilities. They had them tested in the psychological laboratory. In no case did the psychologists find the young men to have the abilities which they had proved themselves to have. I do not understand Dean Schneider to conclude from these tests that psychology can give no aid at all in determining characteristics, only that the proposition has not yet been proved.

In opposition to this experience is one of the Cloth-craft Shop of Cleveland where it was found that the estimates from applying the tests to a group of its executives and skilled employés were almost exactly those that had been formed in the shop after long experience.

Probably the wisest conclusion in regard to psychological tests is that while they may be suggestive, they are not final, and that either to reject or accept a man on their showing is almost as foolish as rejecting or accepting him on the shape of his head. They may show with fair accuracy what a man cannot do, but they do not give a clue to much that he might learn to do. The human being is too wonderful a creation, he has too many possibilities hidden from himself and all men to reveal his powers at one or many sittings to the cleverest devices of any psychological wizard.

Our new leader not only tries to digest the sub-normal, he often makes a brave and patient attempt to assimilate the criminal. Out in Kansas they have

founded an association called the Humanitarians, which proposes to back up the discharged prisoner in all his efforts to be self-supporting and decent. They are seeking the co-operation of employers. They find that it is not only Henry Ford who believes in the power of a human being to "come back" and is willing to give him a hand. One of the officials of the Humanitarians writes me that while they have found many employers of labour sceptical in the extreme concerning the business policy of opening the doors of their factories to prison graduates, their objections are founded on sound principles and *not because of inherent distrust of the men.*

Some contend that the man with prison training is unfitted for efficient work; that he has acquired the tendency to slight his task while in prison, and that he will continue to do the least possible amount of labour when released. In a way they are right, and that fact is a discredit to the prison systems now in vogue.

Others take a broader view of the matter. The Humanitarians have placed men with the Sante Fé Railway Company, the Chalmers Motor Company, the Peet Brothers Soap Company, The "101" Ranch Corporation, and dozens of smaller concerns. Those men have made good and are making good.

In connection with the work they are attempting to further the educational advantages of the prison body. Several technical schools have been approached. Some have offered assistance, others have agreed to take the matter up with the faculty,

and only one, the I. T. U. School has refused co-operation. That particular school is under the management of the International Typographical Union and at their recent convention they refused to consider the request favourably. It is not surprising that this refusal should have disturbed the Humanitarians. Every man they have in the print-shop of the Lansing Prison, the headquarters of the Association, happens to have been a member of that union at one time or another.

The same interest and faith in human material which is back of this willingness to use it even if it is of low calibre or warped by crime is back of the determination that one finds in all employers of the new school to break down the suspicion and ill will with which the average American workman and employer regard one another. This distrust is so strong at times that the observer feels as if actually handling it. Nothing that the employer tries in the way of betterment is kindly received. No undertaking of the men is treated frankly and naturally by the employer. They are unfriendly classes, intent on wresting from one another all they can, because they no longer see themselves as anything but enemies. The breaking down of this ugly and undemocratic class spirit in American industry and the replacing it by one of friendly and democratic co-operation is possibly the hardest of all the many objects of the new school. It requires time, it requires much experiment. It cannot be accomplished

in the same way in any two places for the sufficient reason that in no two places are the conditions, the needs and the desires identical. Each factory is a separate problem.

The first need of the employer is to awaken interest and faith in his particular effort. He will never do this unless he himself believes that the thing is just and at the same time a part of sound management. It is idle for an employer to think that he can win labour by welfare machinery, by high wages, by profit sharing; unless his reasons for attempting these things are something more than selfish interest, they won't work. No one is quicker to detect the intent and spirit behind a new practice than a body of workers. They know the *scent* of reality. A good thing undertaken for a mean purpose or undertaken half-heartedly and because some competitor succeeds with it is almost surely sterile. True, in doing the thing, a man may come to appreciate the meaning of his undertaking, may himself be converted, but unless this happens, his plan will fail.

I have seen a makeshift of a lunch-room set up in the middle of a factory floor, a recreation-room for which space was stolen by piling goods higher, a first-aid room, made by partitioning the end of a hall, all used joyfully and to their full capacity by girls who said and meant it: "Gee, but this is a fine place to work!" And I've seen the most aproved form of cafeteria, an attractively furnished club-room and a modern hospital go practically unused.

"Raise our wages, cut down the hours, and carry off the dust. That's what we want," the workers tell you — and they are right.

The new employer must base his undertakings on faith in the power of men of different grades of ability and of education to work together happily and justly. He must believe that good will is as possible in such a group as ill-will, that trust is as practical as suspicion, that whether you have the one or the other depends on management. That is, the new employer is candidly and gamely taking on his own shoulders the responsibility for the deplorable class spirit which exists to-day in our industrial life. The tendency of all the activities described in the previous chapter is to confidence and equality, for the reason repeatedly pointed out that each of them requires the co-operation of the whole force. This co-operation is sometimes quickened by shop organisations devoted to that particular end. For a number of years now the Pilgrim Laundry has conducted floor meetings at which the management has explained changes in methods, put questions as to policy, listened to criticisms, and often taken votes. The admirable German-American Button Company of Rochester, New York, is so organised that anything and everything concerning the operation and the management of the factory can be fully discussed with heads of departments and officers. Department meetings are frequent and the Progress Club, a factory organisation in which all employés as well as the management are represented, takes up problems as they present

themselves. For example, this factory has been working towards a more satisfactory classification of operations, grading them according to their difficulty. Wages are fitted as nearly as possible to the grade of work. When these changes in wages are made they are fully discussed at department meetings. The operative learns the theory on which his wages are being adjusted, and has an opportunity to express his opinion. The factory has been steadily decreasing its hours, as it developed a more scientific management. These changes, the rest periods fixed, the relation of pay and hours are all matters which the departments and the Progress Club thresh over. It is out of the question for a factory force so organised to harbour ill-will and suspicion. It has a free vent for its discontent and its ambitions. It is taken in. It knows that there is a steady effort to improve not merely the profits of owners, but its profits and opportunity. The organisation works towards a real, not a fictitious, democracy. It is the enemy of hostility.

An organisation modelled after the Progress Club of the German-American Button Company is the Quality Club of the Hickey-Freeman Company of Rochester. This Quality Club is made up of the officers and directors of the firm, the heads of departments and an elected representative of every fifty employés. This membership elects officers and appoints committees. A list of the committees will give a fair idea of the range of the club's interest — the kind of look-in on the business which it gives.

There are committees on "Quality of Merchandise," "Service to Customers," "Efficiency," "Quality," "Traffic," "Safety," and "Activities." I once attended a meeting of the Quality Club at which all of these various committees reported. It was one of the most informing and stimulating shop gatherings that I have ever seen. The reports were frank, as was the discussion. I learned at the gathering more about the clothing business than I had gathered in repeated visits to other factories. There was no glossing over of inefficiency. The sharpness of observation, the evidence that the floor through its representatives was taking note of its surroundings and demanding what it thought it ought to have was abundant; for instance, the Safety Committee reported 17 different sensible recommendations as having been put into effect since the last meeting, and 15 different sensible suggestions were made in the discussion of the report of the committee, things that obviously needed attention in the factory, and of which the management would probably not have known if it had not been for the co-operation in its safety work that it was getting from the rank and file.

There was the liveliest interest taken in the activities which the committee was planning for the health and pleasure of the employés. One came away from the meeting of the Club with an impression that there was a body that was intelligently striving to get itself onto a basis of friendly understanding.

Where such clubs as the two mentioned above are conducted for any length of time, I cannot but believe that a spirit and attitude of mind will be established in the group which will make it possible for every employer and employé to take up together even the questions that gather about Unionism, its aims and pretensions, questions that now are ignored pretty generally. Unionism as one of the labourer's rights will be freely considered, just as the association of the manufacturers in a particular line and the relation of that association to the employé might very properly be discussed.

What it all amounts to is that a way is being found by which all of the workers concerned in a factory shall be able to meet and to consider anything and everything which even remotely affects them. Of course nothing less than this should be the aim of every industrial group if we are to have anything like an industrial democracy in the country.

There is no more striking contrast between the old and the new schools of management than the way each looks at his task of management. The one sneers at the idea that management can be reduced to anything like a science. It cultivates rule-of-thumb methods, resents criticism, denies that it has any responsibility towards employés other than that of paying the wages agreed upon. It is suspicious of its competitors, looks on government regulation as an interference with its personal rights, denies that a private business can have obligations to the public; that is, generally speaking, this old school manage-

ment is narrow, suspicious and obstinate. The new school is none of these things. It believes that management can be developed to a science, and it gives itself whole-heartedly to this development. It is an eager learner, a tireless experimenter. It invites criticism. Instead of suspecting its opponents, it invites exchange of ideas and views with them. Trade secrets it regards as bugaboos, and declares that business succeeds by freely tapping all sources of information. It is absolutely opposed to monopoly of ideas.

This attitude towards management has resulted in several interesting organisations for furthering the discussion and the exchange of experiences. The first of these societies was formed in 1912 in New York, and is known as the "Efficiency Society." Quite unexpectedly to its founders, demands for membership came from all over the country. They came from all sorts of people directly and indirectly interested in business. The Efficiency Society has been followed in various parts of the country by similar organisations. Its most important national successor has been the Society for the Promotion of the Science of Management formed by the Taylor group.

The most significant and promising recent development of the idea is local, The Executives Club, of Detroit, Michigan. This organisation, now a little over two years old, is made up of Detroit plants. The managers of these plants meet regularly to discuss all sorts of shop problems and to exchange their experiences. It is a kind of industrial clearing house

for comparing and studying whatever the various Detroit managers are doing. They spend much time on the theory and the practice of scientific management. They discuss the use of the stop-watch, the type of operator on whom it is best to make time studies, the question of fatigue and how it is to be met, the standardisation of all kinds of operations, the various systems of wage payments, cost systems, all of the problems involved in changing their plants from the old time military rule to the new function-alised rule.

The Club has an admirable paid secretary, Mr. Boyd Fisher, and under his direction it gathers information on industrial problems. One of the completest recent studies of Profit Sharing has been made by Mr. Fisher for the Executives Club. When complicated labour situations arise, in different parts of the country the Club tries to get down to the causes and to learn from the experiences that others are having how to avoid irritation and suspicion. Its meetings fairly boil with interest and suggestiveness. The Club has never made any report on the practical results of its discussions and interchange of ideas and experiences, but it does claim that these have been considerable. They must have been, for nothing else would have kept together a group of men on whom the business pressure is as perpetual and as strong as upon these Detroit executives. Things do leak out, however, to show the effect of the organisations. Ten plants are said to have established employment departments

since they came into the club, 22 to have appointed welfare managers. There have been all sorts of changes in the organisations, all of them towards a higher degree of standardisation. Considerable savings have been reported through ideas picked up at the meetings. The interest and belief in profit sharing has spread, and at least two plants are adopting systems. Probably the great work of this Executive Club is its constant demonstration of the value of full and free co-operation and exchange.

An interesting proof of the spread of the conviction that co-operation between plants is a healthy and profitable thing lies in the interest which managers in many other parts of the country have shown in the Detroit undertaking. Wide-awake managers of the new school have hastened to Detroit to study the club, hoping to adopt it in their own communities. Several local efficiency societies have reorganised on the lines of the Executives Club. It all goes to show how wide-spread these ideas are, and how many men there are glad and ready to put them into practice when the way is pointed out.

It is a conclusive proof that we have in the country a new type of management, taking upon its shoulders the burden of industrial unrest, injustice and inefficiency; that this school believes that it sees the road out, and that it is willing to give the best of itself in opening the road.

That very thoughtful and experienced engineer, H. L. Gantt, considering certain industrial weaknesses that have been developed by our attempt to

fill quickly large war orders, puts the responsibility squarely on management. "The right to exercise power without the ability to exercise it properly" is in Mr. Gantt's opinion the cause both of the inefficiency that develops in our manufacturing as it is of the unrest in our industrial life. "Too many of our industrial plants," he says, "are still founded on what has been done, rather than on what can be done. The real industrial leader must be guided by future possibilities, rather than past performances.

"Many of those who control our industries hold their positions, not through their ability to accomplish results, but for some other reason. In other words, industrial control is too often based on favouritism or privilege, rather than on ability. This hampers the healthy, normal development of industrialism, which can only reach its highest development when equal opportunity is secured to all, and when all reward is equitably proportioned to service rendered. In other words, when industry becomes democratic."

The frank acceptance of this point of view and the intelligent attempt to meet it by such undertakings as have been described in the preceding chapters make one hope that we may finally really democratise our industrial life. It is not too much to say, I believe, that these undertakings are making a new man of the employer. He is discovering not only that his business may be handled in a scientific way, which hitherto he has denied, but that business so handled is far more interesting, as it is far more profitable.

He is seeing a significance and a possibility in humanising his relations that he formerly did not dream. He is developing the inspiring consciousness that it is possible for him to be not a mere manufacturer of things for personal profit, but as well a maker of men and women for society's profit.

INDEX

A

Accidents, believed to be due to darkness, 9; study of, and resulting conclusions, 9; crusade to prevent, 50 ff.; records of industrial, 54; investigation of causes of, 58; in foundries and metal works, 58-59; in tanneries, 59; in cotton mills, 60. *See Safety movement.*

American Association of Labour Legislation, unemployment insurance favoured by, 288.

American Railway Association, use of intoxicants prohibited by, 120.

Architecture of modern factories, 4-8.

Armco Bulletin, factory paper, 301-302.

Art in Buttons, factory paper, 303.

Athletics for factory workers, 32-39; effect of, on lives of employés, 295.

Atterbury, Grosvenor, building of houses for workingmen by, 160-162.

B

Babcock, George D., contribution to unemployment problem by, 274-276; solution of problem of awards for suggestions reached by, 306.

Baker Manufacturing Company, profit-sharing plan at, 249-256.

Ball-playing for factory workers, 33-35.

Beech Nut Factory, Canajoharie, health maxims of, 104-105. Bell Telephone Company, pensions and disability and death funds of, 256.

Beloit, workingmen's houses in, 135-136.

Boston Consolidated Gas Company, profit-sharing experiment of, 233-234.

Brown and Bigelow factory, athletic sports at, 35-36.

Brown and Sharpe Manufacturing Company, temperatures at, 13; "Safety First" at, 57.

Bull, R. A., on effect of the eight-hour day, 175.

Bulletins, safety, 65-67; of Life Extension Institute, 105-106; aimed against drink, 125-126.

Bureau of Printing and Engraving, as an example of factory architecture, 7-8.

Burlingame, Luther D., on factory safeguards, 57.

C

Canneries, hours of work in, 177-179.

Chace, George A., quoted on profit-sharing, 226-227.

Clarke, Judge John H., on policy of shutting down shops, 268-269.

Cleanliness, new ideas of, resulting from factory health movement, 292-293.

Close, C. L., study of accidents and their prevention by, 60-64.

Clothcraft Shop, girls' playground at, 32; health work of, 95-97; effect of shop conditions on drink question shown by, 114; hours of work at, 190; effect on wages, production costs and hours, of scientific management at, 214-216.

Commonwealth Steel Company, Fellowship club at, 41-42; status of coloured men at, 43; measures taken to prevent accidents at, 59; eight-hour day at, 174-175; pride of workers in product at, 300-301.

Commonwealther, factory paper, 301.

Co-operation, training in, given by new factory methods, 310-315.

Cotton mills, scientific management in, 18-19; measures taken to prevent accidents in, 60; effect of scientific management in, 210-212.

Crane Company, care of sick employés by, 86; use of milk by, to discourage beer drinking, 115.

Crawford, William J., on a shorter workday for granite cutters, 169-172.

Criminals, attempted assimilation of, by new industrial order, 320-322.

Crowell Publishing Company, scientific management applied to rush season by, 179-180.

D

Delaware and Lackawanna Railroad, safety work on, 71-72.

Diseases, occupational, 77-79; attempts to control, 81 ff.;

problems presented by minor degenerative, 91-96.

Distrust of workmen for employers, breaking down of, 322.

Dodge, J. M., quoted on scientific management, 208-209.

Dow, Marcus A., safety work by, 72.

Drink, the industrial campaign against, 110-133.

Drugs, use of, as medicines by women workers, 107-108.

Dublin, Louis I., diagram of diseases by, 91-93.

Duluth, solution of problem of unemployment at, 278.

Duncan, James, on effect of shorter hours, 168-169.

E

Eastman Company plant, athletic and social activities at, 47.

Edison Illuminating Company, health rules of, 79-80.

Education secured from modern factory undertakings, 290-316.

Efficiency Society, New York City, organisation of, 328.

Eight-hour day, the, 167-192.

Employment bureaus, public, 281-287.

Executives' Club, Detroit, 328-330.

F

Factory banks for employés, 288.

Fairbanks Manufacturing Co., reduction in accidents at, 69.

Fatigue poisons due to too long hours, 166-167.

Feiss, Richard, work of, with scientific management at Clothcraft Shop, 214-216; on standardizing of trade conditions, 271.

First aid work, 71.

Fisher, Boyd, studies of industrial problems by, 329.
 Floating labour, investigation of question of, 263 ff.
 Food *vs.* alcohol, 114-115.
 Ford Motor Works, fight against drink at, 127-129; effect of profit sharing on steadyng of labour at, 224-225.
 Foundries, accidents in, 58-59; hours of labour in, 173-175.
 Free public employment bureaus, 281-287.
 Frick Coke Company, homes and housing conditions of employés of, 137-144.

G

Games, advantages of, for factory workers, 32-35.
 Gantt, H. L., on the responsibility of poor management for industrial weaknesses, 320-321.
 Gardens, about factories, 22; as a factor in anti-saloon crusade, 118; in Frick Coke Company villages, 141-142.
 Gary, failure to provide homes for unskilled labourers at, 159.
 German-American Button Company, method of handling labour force by, 266; suggestion system at, 303-305; co-operation of management and employés at, 324-325.
 Germany, labour exchanges in, 286.
 Goggles, wearing of, to prevent accidents, 67.
 Grand Rapids, workingmen's houses in, 135.
 Granite cutters, results of shorter workday for, 168-172.
 Grieves, W. A., investigation of floating labourers by, 265-266.
 "Grub" better than "grog," 114.

H

Hamilton Watch Company, effect of ventilation at, 24.
 Harvey, A. M., factory health work by, 84-85.
 Health maxims on pay envelopes, 104-105.
 Health movement, the industrial, 77-109; as a means of education, 292-295.
 Hoffman, F. L., statistics by, 54.
 Homestead Steel Mills, beauty introduced into, 22.
 Hours of working day, 163-192.
 Housing of workmen, 134-162.
 Humanitarians, aid given to discharged prisoners by association called, 321.

I

Illinois Steel Company, safety work by, 65-68.
 Indian Hill, industrial town of, 156-159.
 Industrial universities, 6.
 Information, establishment of Division of, by Federal Government, 286-287.
 International Harvester Company, lighting of plants of, 9-11; device for carrying off dirt at, 19-20; reduction of accidents at, 68-69; pension fund for employés at, 256.
 International Typographical Union, co-operation in work for discharged prisoners refused by, 322.
 I. W. W., the, 261.

J

Jones, Sam ("Golden Rule"), quoted on working conditions, 97-98; vacations to employés inaugurated by, 98.

INDEX

K

- Kahn & Wilby, architects of Detroit factories, 5.
 Kansas, automobiles and drink in, 126.
 Kansas City, workers' homes in, 134.
 Kendall, H. P., on standardizing of conditions in printing and publishing lines, 270; variety in labour advocated by, 272.

L

- Labour exchanges, 281-287.
 Lake Carriers' Association, temperance work of, 116-117.
 LeClaire, Indiana, town management at, 145; stock ownership plan at, 231-233.
 Life Extension Institute, investigations by, 91, 93; health bulletins and work of, 105-107.
 Lighting of factories, 8-12; relation between output and, 23-24.
 Lunching places for workers, 42-44.
 Lynch, Thomas, leader in redemption of Frick Coke Company villages, 139.

M

- McMurtry, George G., founder of town of Vandergrift, 147-155; on the eight-hour day, 172-173.
 Manufacturing, development of safety appliances in, 55-69; leading states engaged in, 121 n.
 Medical inspection in factories, 102-103.
 Metropolitan Life Insurance Company, care of tubercular employés by, 87-89.

- Milk a better drink than beer, 115.
 Miners, conditions in homes of, 137-142.
 Mines, "Safety First" principle in, 51-52.
 Minneapolis Industrial Association, industrial town centre planned by, 7.
 Minnesota, safety law in, 57.
 Monotony of work, relieving the, 44-46.
 Morrison, C. J., cited on the eight-hour day, 191.
 Mount McGregor, sanatorium of Metropolitan Life Insurance Company on, 87.
 Moving pictures, an aid in accident prevention, 72.
 Museums of safety, 51.

N

- National Cash Register works, gardening at, 23; outdoor sports at, 37-38.
 National Civic Federation, work of, for women workers, 101.
 National Lamp Company, factory buildings of, 5-7.
 National Tube Works, improved working conditions illustrated at, 75.
 Nela Park factory buildings, 5-7.
 Nelson Manufacturing Company, stock ownership plan of, 231-233.
 New England Butt Company, scientific management at, 220.
 New York Central Railroad, safety crusade on, 72.
 New York City, safety exhibit in, 57.
 Nolland, Lloyd, industrial betterment work of, 109.

O

- Occupational diseases, 77-79; attempts to control, 81 ff.

Ohio Industrial Commission, on physical examination of employés, 89.
Order, ideas of, in modern factories, 16-21; relation between output and, 25.
Outings of employés, 31-32.

P

Pauly of Seattle, story of, 279-280.
Pensions for employés, 256-257.
Pfister & Vogel Leather Company, shop lighting by, 11-12; physical examinations of employés by, 85-86.
Phrenology and psychology, test of use of, in selecting employés, 318-320.
Physical examinations of employés, 81-85; of employés, state supervision of, 91.
Pilgrim Laundry, Brooklyn, benefits of social activities at, 45; vacation idea developed at, 99-100; solution of question of working hours by, 181-189; building of, 183-184; meetings of management and employés at, 324.
Plimpton Press, scientific management at, 220.
Price, C. W., welfare work of, 10-11.
Procter & Gamble, temperance measures taken by, 123; stock ownership plan of, 238-249.
Profit sharing, results of plans of, 224, 226-227; reasons for failures of some plans for, 228-230; stock ownership and partnerships as forms of, 230-256.
Progress Club at German-American Button Company, 324-325.
Psychological tests for choosing employés, question of value of, 318-320.

Pullman, Illinois, failure of, due to over-fraternalism, 146.

Q

Quack remedies, use of, by women workers, 108.
Quality Club of Hickey-Freeman Company, Rochester, 325-326.

R

Railroads, records of accidents on, 54; cost of accidents on, 68; safety crusades on, 69, 71-72.
Redfield, William C., industrial creed of, 199-202.

S

Safety movement in workshops, 50-76; effect of, on drink question, 111; as a means of education, 290-292; ability to lead and direct cultivated by, 307; training in co-operation given by, 311.

Saloons, fighting the, 110-133.
Savings funds for employés, 288.
Schwarze, Mr., handbook on shop lighting by, 12; quoted, 24.

Schneider, Dean, use of phrenology and psychology in choosing employés tested by, 318-320.

Scientific management, results of, 16-21; effect of, on production, 25-27; at Pilgrim Laundry, 187-188; tendency to reduction of hours one result of, 189-190; and the wage question, 193; applied to planning and routing orders, 204-205; value as a contribution to the wage system, 221; problem of unequal distribution of labour solved by, 274; solid, definite and far-reach-

INDEX

ing training which results to workers from, 297; makes all tasks skilled labour, 297-298; encouragement of suggestions under, 302-306.
 Scott paper factory, uniform devised for women employés at, 294.
 Seasonal trades, working hours in, 177-181.
 Short time, unemployment due to, 266 ff.; handling of, to best advantage, 276-279.
 Sickness, money losses due to, 94.
 Stabilisation of labour, 258-289.
 State supervision of physical examination of employés, 91.
 Stock-ownership plans as a form of profit sharing, 230-256.
 Suggestions by employés, encouragement of, 302-306.
 Sunday, Billy, fight on "booze" by, 123-124.

T

Tanneries, accidents in, 59.
 "Task and bonus" plan, 207.
 Taylor, Frederick, on reasons for failure of many profit-sharing plans, 228.
 Temperature in factories, 12-13.
 Tennessee Coal, Iron and Railroad Company, results of health work of, 108-109.
 Thompson, C. Bertrand, quoted on factory reorganisation, 308-309.
 Thompson, Sanford E., on reduction of hours in scientifically managed shops, 190; on the task and bonus plan, 207-208.
 Towne, Henry B., on scientific management, 209.
 Trade unions, ill-founded objection of, to scientific management, 208, 309-310.

Trespassing on railroads, efforts to stop, 72.
 Tubercular employés, care of, 86-87.

U

Unemployment, problem of, 259-289.
 Unemployment insurance, 288.
 United Shoe Machinery Company, outdoor life for employés encouraged by, 38.
 United States government, labour exchange established by, 286-287.
 United States Steel Corporation, "Safety First" principle promoted by, 52; Museum of Safety of, 55; stock-ownership plan of, for employés, 235-239; pension fund of, 256.

V

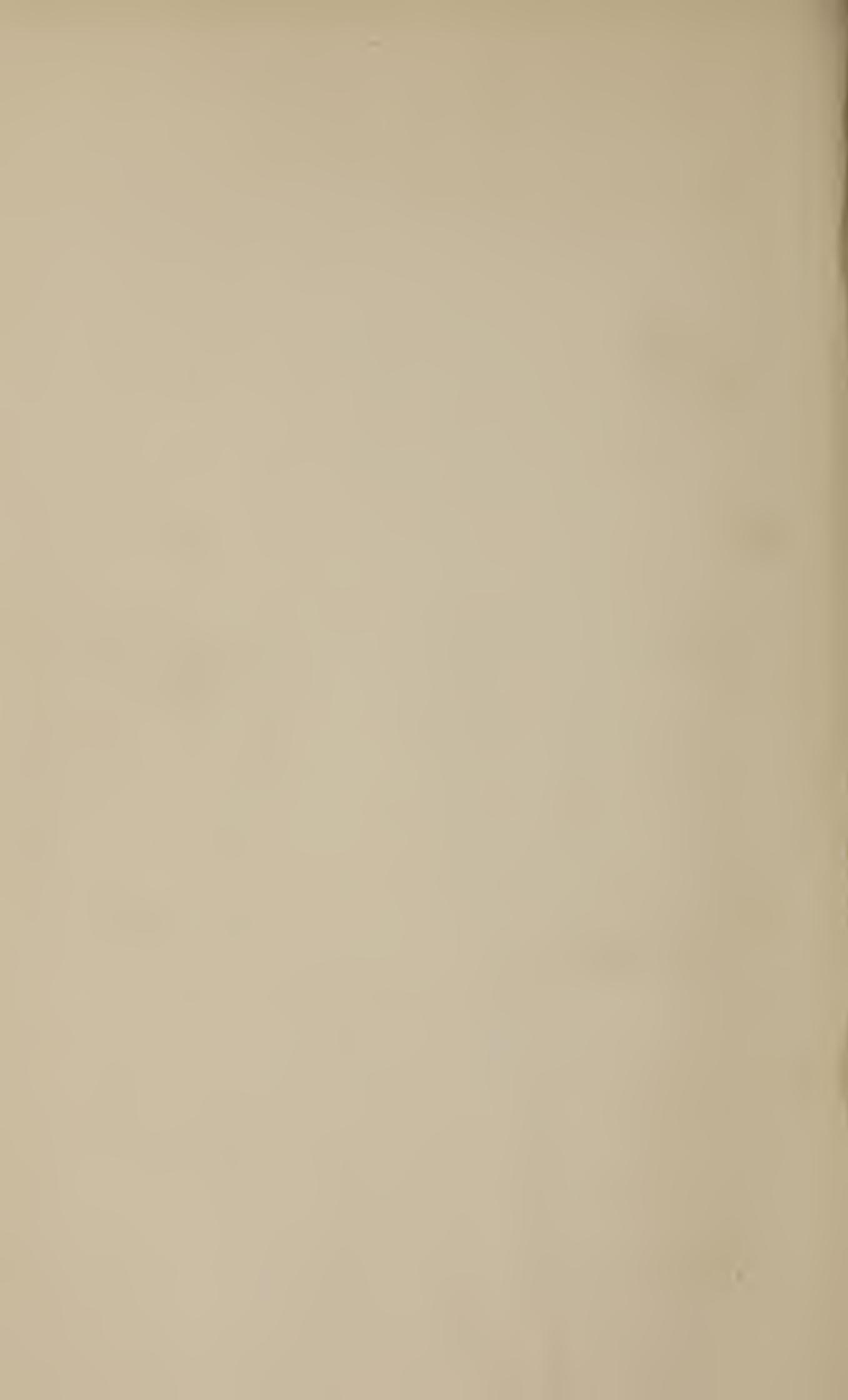
Vacation Committee, New York, handling of unemployment question by, 280-281.
 Vacation Savings Bank, inauguration of, 102.
 Vacations for employés, 98-102.
 Vandergrift, Pa., example of beautifying of factory surroundings at, 22-23; results of no-liquor policy at, 118-119; account of, as a successful workingman's town, 146-155; the eight-hour day at, 172-173.
 Ventilation of factories, 9, 12-13; relation between output and, 24-25.

W

Wages question, 193-221.
 Wallis & Goodwillie, architects of Nela Park buildings, 5.
 Watertown Arsenal, results of scientific management at, 18, 213, 217.

- Welfare work in factories, 14-15; results of, 26-28.
- Williams, James H., wage policy of, 196-199; working conditions at factory of, 202.
- Wisconsin Industrial Commission, industrial standards established by, 11, 12; safety bulletins published by, 56; plan for hours of work in canneries devised by, 177-179.
- Worcester Corset Company, health work of, 104.
- Workmen's compensation laws, 73.
- Y
- Young, Robert J., safety bulletins by, 65-67.
- Youngstown Sheet and Tube Company, study of accidents at, 9.

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