THE OFFICIAL

Miners' Service Record
and History

For Sub-District No. 5
of District No. 6
U. M. W. of A.

"They Did Their Full Duty—As Men and As Americans"

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THE members of Sub-district 5 of District 6, United Mine Workers of America, have at last realized their ambition of years—a temple of their own. The magnificent structure pictured here is theirs. It is located at Thirty-fourth and Belmont streets, Bellaire, O. The building is almost complete and the contractors have promised that it will be ready for dedication on Labor Day. The structure will cost the sub-district organization approximately $200,000. The site cost $35,000 and the naked building $125,613. Heating, lighting, etc., will run the total cost close to the $200,000 mark. Contract for erection of the building was let in 1918, but it was decided to postpone erection until after the war in order that no energy might be taken from the task of winning the war. It is estimated that the structure would cost fully $350,000 were a contract for it let today. Plans for the building were drawn by Architect Fred Paris, of Wheeling, and the construction work done by R. R. Kitchen & Co., also of Wheeling. The building stands three stories high, covering an area 82x120 feet. The section of the building showing the long row of three-story columns is to be a theatre, capable of seating 1,200 people. The entrance to the theatre and a separate entrance to other parts of the building are shown in the large 20x30-foot foyer on the side to the left of the picture. On either side of this foyer on the first floor is a store-room. The second floor contains office rooms, while the entire third floor is to be devoted to the mine workers. Here will be the sub-district office rooms and a convention hall capable of handling small meetings. The theatre will be used for unusually large meetings. Directly beneath the entrance, in the basement, will be a rest-room for miners' wives and families and across from it a smoking room for the men themselves. Beneath the theatre the basement will be fitted up with a billiard room and banquet hall. The entire expense of the temple will be raised by assessments in the sub-district, most of which have already been paid. The report of Secretary-treasurer William Applegarth, as given at the sub-district convention this spring, showed total receipts of $140,431.06 in the building fund on March 1, 1920. Of this amount $50,000 was borrowed from the district organization.
The Miner As a Warrior

“BOYS, I've been minin' coal in this subdistrict a good many years. And for more years than I like to think about we've been plunnin' an' hopin' an' workin' for a home of our own. We are at last able to go ahead with the work. We all know it if you ask it, God knows, and you certainly deserve the temple. We won't get a bigger duty to face. We got a war on and that's all there is. Uncle Sam needs every dollar an' every spare pound of cash to win the war. Let's put off building' the temple till we get the war off our hands. Let's put the money for the building into Liberty Bonds and let the workmen who would build it do something to help win the war.”

It was back in 1918, during a convention of Subdistrict 5, of District 6, United Mine Workers of America. The speaker was an old-timer. He was big and gray, and he was speaking in support of a resolution proposing postponement of erection of the subdistrict Miners’ Temple. The resolution was unanimously adopted. The men put their dreams of years aside in order that they might strengthen the war machinery of their country.

The Miners’ Attitude

This incident was characteristic of the attitude of Subdistrict 5 throughout the war. They responded to every demand made, embraced every sacrifice offered and accomplished every task presented. And they did it in a quiet, unobtrusive way. You never heard from the miners. While others were blustering of their Americanism and flapping the flag the miners buckled to the task and sawed wood.

We have heard much of the miner and his demand for improved conditions since the war. Most of this has been uncompromising. He has been accused of every conceivable motive but a just one. We seem to have forgotten that these same men went through the war on a low wage scale—which latterly came to be acknowledged as inadequate and was augmented by an increase from the Fuel Administration—and produced the greatest coal output in the history of the nation; that during this same period they sent thousands of their young men to the battlefield and still kept up the production and invested stupendous sums in Liberty Bonds and stamps.

Back in the early days of the draft, it will be recalled, there were no specific provisions for industrial exemption and in many sections coal miners were drafted. Later they were placed in a preferred classification, but prior to this something over 1,200 members of Subdistrict 5 went into the service either through the draft or enlistment. The number of members in the enlisted until the total was doubled beyond the 1,500 mark—a mighty creditable showing from a membership of then less than 15,000, a great percentage of whom were well beyond the draft age.

The Measure of Service

This matter of actual physical service in the war is the yardstick with which war work is generally measured. Under this test the miners of Subdistrict 5 pass with flying colors. There is another measure—much in favor—the purchase of Liberty Bonds and War Savings and Thrift Stamps. In this test they surpass even the fondest expectations. It is a shame that no accurate record was kept of their investments; that is, that a record was not kept of all their investments. An effort was made to obtain this information from every local in the subdistrict. In very few cases was there an account kept of even the investments of the local and in practically all cases there was any definite information as to the individual investments of members. They are not strong on keeping records, but that is their excuse. They keep themselves busy breaking them. However, from the most available information obtainable it is certain that the miners of Subdistrict 5 invested $2,600,000 in Liberty Loan Bonds and several hundred thousand in Thrift and War Savings Stamps. Little effort was made to solicit the miners during the first and second loan drives. Except for this their subscriptions reached a total of approximately $200,000 for both loans. During the last drive they subscribed to an estimated total of $225,000 worth of bonds and it was felt the pinnacle was reached, but during the fourth loan these sums were close to the million mark, running well over $900,000. In the fifth loan they dropped back to $200,000.

Not even an approximate figure can be given on the stamp purchases, but careful inquiry divulged the fact that practically every local and nearly every member of every local and hundreds of the children and wives and sistens of miners, bought stamps and stamps and then more stamps.

The Real Accomplishment

All this must be a source of gratitude to the men and officers of this splendid organization of working men and a something which will live in history as a perpetual monument to their patriotism. But the real measure of accomplishment lies in the production figures for 1918, the year in which the cry for coal was heard from coast to coast. During this year, 21,000,000 tons of coal were taken from the mines in the subdistrict territory, with only about 13,000 miners employed. In Belmont county alone 12,165,258 tons were turned out. This year of 1918 saw the greatest coal production in the history of the industry. The state of Ohio was one of the leaders of the country and Subdistrict 5 turned out the top-notch production of any section in Ohio. In Belmont county they turned out the best in the counties of the state. The miners worked day after day, week after week, many times under conditions which they considered unjust, and their production record was curtailed only by the restrictions of our shortage.

The Men Who Did It

Under ordinary circumstances this record would be one of which any group of Americans might well be proud. Accomplished by the fourteen odd thousand Subdistrict 5 miners, with a membership representing a score or more nationalities, it approaches the remarkable. Prior to the entrance of the United States into the war not more than 25 percent of the population of Subdistrict 5 were citizens of the United States and not more than 10 percent were native born! Think of it—a group, roughly speaking, of 15,000 men, 12,000 of whom were not recognizing allegiance to the United States and most of whom were from subjects of European countries, and but 1,500 of whom were native born Americans, accomplishing a record like that. Many of these men were natives of enemy countries. Hundreds of them were ignorant of issues involved in the war and had, in fact, but a hazy idea of what was going on. Many others had a wrong impression of what our part in the war really was. And then there were among them those who sought to undermine what belief in America and Americanism existed; who planted the seeds of discontent and distrust. And yet this splendid organization held them together, taught the ignorant, curbed the vicious, strengthened the weak and brought them through with a glorious war record.

Still on the Job

Now have the miners of Eastern Ohio stopped their program of constructive Americanism with the termination of the war? They have written into the rules of the organization a clause requiring all members to become citizens of the United States and naturalized. They have undertaken also the question of education among both children and adults; they have undertaken an educational interest in their country’s problems; they have, in short, demonstrated that they are Americans and America is proud of them.
SUB-DISTRICT FIVE

By WILLIAM ROY, President Sub-District 5 of District 6, U. M. W. of A.

WHEN we think of the many wonderful things accomplished by the nearly 10,000 mine workers of Sub-district 5, it brings to mind the many obstacles encountered along the road by these men from the time they were organized twenty-two years ago. What a wonderful history of these United States those twenty-two years make! What stories of sacrifice on the part of those who laid the foundation could be told! What were the desires and hopes of these men who were leaders in the movement gone by? Sometimes if we would only pause and consider what they have done for us in surmounting things that appeared impossible it would lighten our present burdens and help us work out today’s problems more successfully.

I desire here to give appreciation to these noble brothers of ours, many of whom have passed away and their being now only a memory among a very few. To those who are still with us we are gray-haired and still struggling in many instances to make a living. But they were young, healthy, and full of the spirit of spunk, working, fighting, struggling ever onward, that the lives of those who were to follow might be easier. Let us again stop here and see what our Sub-district was composed of and what some of the things we were striving for.

Prior to 1898 our Sub-district was a part of County that now forms their own Sub-district and in 1894, the men then in charge instead of having a conference or council committee had to write to each individual operator a letter asking for an increase of better working conditions and invite them to reply and voice any objections they might have. At that time they were asking for sixty cents a ton. Remember that this was pick work and screen coal. They were also asking for $1.75 per day for drivers, $2.00 for teammen, $1.50 for our help. Remember that the eight-hour day was not in effect and that men had to work any number of hours the operator wanted them to work. Also men were compelled to deal in company stores or there was no work for them, or it was in a place no one else would have. The above prices were only asked for, but not received, for we find in part of 1894 the tonnage price was 50 cents pick work, screen coal, and day men, $1.50 as many hours as they could work. But to go back to a time prior to 1898 would be useless for white contracts for tonnage and day work have been in effect since 1982 we did not have organization enough to enforce them.

The Eight-Hour Day

In 1898 one of the dreams, one of the things that had been contested for from the time the first mines were opened, was accomplished. At that time the eight-hour day became a reality. How happy must have been the old fighters and how they must have rejoiced over this victory. At that time also our present Sub-district was born and the price we received for digging a ton of screen coal with the picks was 56 cents and the day workers were receiving $1.65. We then had a continual increase in contract price until 1901, when we were again forced to accept a reduction which was not active until 1906. Since then we have had an increase in the expiration of each contract. Since the establishment of our eight-hour day in 1898 there was a continual demand for tonnage. After years of waiting, carefully laid plans and legislative activity this also began to have a reality in May, 1915.

The realization of this long hoped for improvement completed the building foundation for which was started years before. I can well imagine that the pioneers believed that when they received pay upon a basis of all coal mined their dreams and the organization would be complete. But it was only begun. Since receiving mine run we have accomplished wonders faster than we had dared think before. In saying this I make no excuses for delay in receiving payment for many other kinds of work for which we are entitled. Nor can I understand the many inequalities that still confront us. I only call your attention to this that we may not get discouraged. We have taken years to get many of the things that were dear to us, but we have steadily progressed each year. Our hopes for greater improvements in the future.

Recent Progress

We started to work in May, 1915, at 47 cents per ton mine run and $3.84 per day. Since that time the price per ton has increased to 90 cents and the day work to a maximum of $6.00, and while this seems a big wage, it is not when we consider the high prices we are forced to pay for the necessities of life and the small number of days we get to work. In 1913 we worked five hundred and forty days, in 1914, one hundred and eighty days, in 1915, one hundred and forty-two days, in 1916, one hundred and ninety-seven days, in 1917, one hundred and ten days, in 1918, two hundred and forty-four days and our yearly wages only averaged in 1913, $776.00, in 1914, $905.00, in 1915, $528.00, in 1916, $771.00, in 1917, $858.00 and in 1918, the war period, only $1,364. In consideration of the fact that Government statistics show that it takes more than $2,600 per year to keep a family of five in comfort and decency the miners must still make more than at present in order to live. It is their most sincere desire to move more often than it is for the picture shown to them, and to have publicity given to statements that the rich cost of living is due to big wages that are being paid. We know it is not so. The people who tell us, or print it, know it is not so.

Our Government knows we do anything about it except talk. There has been a lot of that going on, but the picture goes on forever, cheating, robbing and misleading the consumer. It seems the average man selling goods to the average man guesses how much you can stand and makes you pay that price. After all it was when the war clouds were hanging low. How we promised each other a new world, wherein all the people would strive to make the world a better place in which to live. But it appears we are doing exactly opposite from what we then promised.

The world seems to have gone money mad. Each is striving to place himself on the right side, regardless of the misery he inflictions upon his fellow beings. While the old pioneers of our movement have done lots of things for us, there is much yet to do. Many new problems are constantly arising and we must ever be ready to fight for our rights.

The Mine Workers of our Sub-district showed that love and loyalty to our Government during the war by buying hundreds of thousands of dollars worth of bonds and stamps by sending nearly 3,000 thousand of our members to the front and by sending a pound of coal that could be taken away by the railroads, as much as ourselves and other workers that were promised a square deal, and a democracy in which all honest men can enjoy life without the fear and worry of a time when they might have to face hunger and cold. When we complain of can and will be remedied. We can do it if the workers remain steadfast and true to each other. Let us use every legitimate means to advance our people and to patiently and intelligently strive for the goal that means for us the assurance of a livelihood, peace and happiness.
Americanism--The Road to Progress

By FRANK LDEVINKA,
(Vice-Pres. Sub-district 5, of District 6, U. M. W. of A.)

OUR Organization, the United Mine Workers of America, is the most progressive organization of workers in America.

We are rapidly approaching the peak where the United Mine Workers will have a hundred percent organization. Then, and only then, will we be able to accomplish better, more progressive and greater things.

With the Mine Workers of this country hundred percent organized, no just demand can be refused, and the workers will progress to a higher plane of life. United, the workers have the force to better their lot to win constructive progress.

Cooperation Necessary.
Now that our organization has progressed to its present state, it is possible already to expand it in the fields that will spell a greater good to its members. In order to bring about relief to ourselves and our families we must organize in the economic field, by establishing co-operative stores.

The time when we will be forced to buy life's necessities at company stores at exorbitant prices is gradually passing into history, as the organization of the United Mine Workers of America is the only road to emancipation.

Our organization has accomplished much good along this line, but it can do more; but we must all place our shoulder to the wheel of progress.

Men of All Nations.
The membership of the United Mine Workers of America is composed practically of every nationality on earth, and because of this fact that a large portion of the rank and file is of foreign birth, and neglected to a great extent to naturalize in order to help in the selection of the various law-making bodies, the United Mine Workers where not the power politically they could have been had every one of us done his duty towards himself and his organization. The seventh paragraph of Article I of our Sub-district Constitution, which reads as follows:

"To secure by legislative enactment, laws protecting the limbs, lives, health of our members; establishing our right to organize; prohibiting the use of deception to secure strike-breakers; preventing the employment of privately-armed guards during labor disputes; and such other legislation as will be beneficial to the members of our craft."

Sets forth our aims. How can we obtain them? Only if we elect friends of organized labor in the hall of our law-making bodies. I am opposed to politics entering into the United Mine Workers of America, but I am heartily in favor of the United Mine Workers entering into politics as a united body. Get Into Politics.

In order to make our organization a powerful factor on the political field we must point out to our foreign-born brethren the necessity of becoming naturalized.

Let us begin a campaign of safe and sane Americanism. What do we understand by Americanism? The word Americanism is so grossly abused and misinterpreted that we reserve the right to disagree with some who preach it. The Mine Workers are so true to American principles, that we shall demand that principle against those who use it under false pretenses. I advocate Americanism of our foreign-born population, by educational and protective methods, and protective legislation, but I doubt that any one will be convinced that he is in the land of the free and the home of the brave, when he is denied the right to vote or denied the right to collectively bargain, or denied a wage necessary to live decently.

Real Americanism.
Americanization based on the Declaration of Independence in the American Constitution will find a response in every human heart and faithful citizen and we will have not any trouble in Americanizing the immigrants. Let us agitate with all our might the principle of Americanization, but at the same time we must agitate to keep the American ideals united with American standards of living. Labor must be on the guard and protect the principles of Americanization, the great heritage of our forefathers who bled and died for their establishment, and not permit a certain privileged class to use it to conceal tyranny, militarism and industrial persecution.

Freedom, Not License.
Americanism is absolutely necessary in our land. I wish to say that some of the plutocrats need it most. We, the workers, are the staunch defenders of our institutions and we wish to remain in a country of the free, and by no means construe freedom as a license. In our recent district convention a clause was added to our constitution making citizenship mandatory. I fully approve of this plan, first from a standpoint of Americanism; second, from the standpoint of self-defense on the political field.

I therefore appeal to you all to assist our foreign-born brothers in the Americanization work, teach them the true principles of Americanization, assist them in the way of becoming citizens, and I'll assure you that your efforts will be greatly appreciated by all to whom you extend a helping hand.

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The Care and Operation of Mining Machines
By F. E. VAN SLYKE,
(Consulting Engineer, The Jeffrey Mfg. Co.)

There are a number of things in connection with the use of mining machines that are absolutely necessary to insure economy and success in operation, and unless particular attention is given to them it is difficult to obtain entire satisfaction to all parties concerned. First and foremost is the care of the bits, cutter chain and cutter arm. The bits should always be sharp, even if it necessitates frequent changing, as the time lost in changing is not nearly so serious as the strain on the machine when operating with dull bits. In addition to excessive strain, the motor is overloaded even to the extent of 100%, and the wear of all parts is very materially increased. The only way to have sharp bits is to keep the machine properly lubricated and to have the teeth properly shaped. It is also very important that the bits be so shaped that they have sufficient clearance at the back, as a parallel sided bit increases the power consumption very materially. The forms sent with the machine should be kept in shape, and someone should check these up occasionally and see that they are made correctly. The back part of the bit should be at least 1/4" less in width than the front. Care should be used to see that the bits are as far from the machine as possible in order to obtain the full efficiency of the cutter chain and the links, and also that the set screws are absolutely tight. Dull bits, insufficient clearance at the back of the bits, and insufficient clearance for the cutter arm, are a source of great trouble on coal cutting machines of all kinds, and it is most important that every care be used to insure satisfactory conditions in regard to these points.

The chain should be kept moderately tight, but not so tight that it binds, and it is often overlooked in inspecting that on new machines considerable slack develops in the first few hours of running, due to slight irregularities in the holes in the chain which are smoothed down as soon as the machine is put into operation. The smoothing down of even .001" on a large number of links will add considerably to the length of the chain, and the tension should be watched very carefully on new machines. The chain should be tightened up as far as it will go, and then backed off so that almost all the set screw is under tension. If the operator gives this matter some attention, he can soon arrive at the proper chain tension by observing how it acts under different conditions. It takes very little time to note the operation and experiment a little with various tensions, and it is well worth the trouble.

The hardened strips and wearing parts of the cutter arm should be renewed as soon as the center line of the chain gets out of line with the center line of the cutter arm, as this will cause a reduction in the depth of the kerf and cause the cutter arm to bind. The same condition is brought about by the wearing of the parts of the chain links which fit into the hardened guides on the cutter arm. This condition is easily detected by simply lifting the chain when it is not running. If it can be raised up from 1/2" to 3/4" these parts should be immediately renewed. It will be observed that the depth of the kerf is entirely dependent upon the chain being held in a central position.

In replacing broken links care should be taken that the new link will give the same bit position as the one taken out. In many cases the machine runners put in a new link without paying any attention to this, and in a short time a number of the position in the chain are entirely eliminated so that the machine is not cutting over the fullest area of the kerf depth. This leaves portions of coal which are broken out by the chain links instead of by the bits, with a consequent increased power consumption and wear and tear on all parts. Care should be taken to see that all bits are in position as the chain links cannot be expected to cut coal.

Another serious matter in connection with the operation of the machines which is not looked after properly in a good many cases, is the renewal of gearing. Gears are sometimes replaced without renewing the pinions, or pinions are replaced without renewing the gears. The renewal of gearing, as a worn gear or a worn pinion is never satisfactory when operating with a new part. Unless one of the members is in practically a new condition it should never be left in when renewing the gear or pinion meshing with it. This is most serious with worn gears, as when one of the parts is badly worn it tends to destroy the other very rapidly.

With renewing bearings, all the bearings for a set of gears should be replaced in order to insure correct gear meshing, as it is very little used to replace the bearings on a shaft when the shaft carrying the meshing gear is running in partially worn bearings.

Another point that cannot be brought out too strongly is the question of keeping accumulations of dirt out of the motor and gearing, as a machine cannot be expected to operate satisfactorily when dirt is piled up around the bearings and gears where it can work into and destroy the rubbing surfaces.

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The Shorter Work Day

THE question of a shorter work day and shorter work week in the coal mining industry was one of the big issues considered by the Bituminous Coal Commission in connection with the recent demands of the miners for increased pay and improved conditions. Herein are presented, as a matter of information, excerpts from both the majority and minority reports on this question.

(FROM THE MAJORITY REPORT)

We have gone fully into the Mine Workers' demand for a six-hour day and a five-day week, equivalent to a reduction of working hours from 48 to 30 per week.

In considering this demand we were influenced in arriving at our decision by the fact that steady work on the part of all workers is urgently required by the entire world during the period of reconstruction and reorganization when the enormous destruction and disorganization wrought by the World War in all countries and affecting all industries must be counteracted by unusual industry and perseverance. To make any restriction affecting the output would be an economic crime.

It is claimed by the miners on the basis of experience after previous reductions of hours of labor and of the effects of reduction of hours in other countries, that curtailing of working time would not reduce the output in anything like a corresponding proportion. It is our view that arguments based on the effects of a reduction from 10 to 8 hours can hardly apply to a reduction from 8 to 6 hours, or from 8 to 7 hours. Production in countries where there has been a reduction in hours is less than before the hours were reduced. We feel that our responsibility to the Nation will not permit us to make an award that would curtail appreciably the productivity of the workers in a basic industry.

Each coal company endeavors to have enough men on its rolls to carry it over the peak of the rush season; the operators want coal mined while there is a demand, each company realizing that, if it is unable to satisfy its customers, they will turn to other producers and the sale will be permanently lost. A labor supply, sufficient for the needs of the rush season, is excessive during the rest of the year, part time employment results, and the Nation will ultimately have to pay in its fuel bills the cost of maintaining this larger army of partially employed workers.

We are convinced that a reduction in hours of labor would only make a bad situation worse, that the miners' demand on this point is clearly uneconomic, and that to grant it would be detrimental to their own interests.

Another result that would flow from a reduction in hours, with the wages that it is proposed should be paid, will be to increase the number of men who will seek employment at the mines on account of the shorter hours, and the full pay, and this, in turn, will result in further demands for the shortening of hours in order to give employment to the men who would thus be added to an industry that is already over-manned. We cannot, in view of our responsibilities, agree to a demand that would lead to such disastrous results. At the same time, we hope to accomplish something in the direction of the stabilization of the industry by means of constructive proposals discussed elsewhere in this report.

While we are in full sympathy with the miners in their aspiration for a fuller life, we cannot but feel that eight hours a day is not too much to work under present circumstances.

The contention that the extra-hazardous nature of the mining industry makes it desirable to reduce the risks run by the miners by reducing the time during which they are exposed to this risk is inconsistent with the claim that the miners wish to work the same number of hours per year as they are working now, provided the hours are more evenly distributed through the year, for if they work as many hours they will be exposed to the same risks. We also have considered the fact that contractual hours of labor apply only to day workers, and that more than 60 percent of the miners work on a seasonal basis. To reduce the number of earning hours during the year, particularly when one of the chief complaints of the miners is that they do not have sufficient hours of work and consequently cannot earn adequate wages, would clearly not be consistent with the commission's conception of its duty.

Therefore, our conclusion is that, under all the conditions, the eight-hour day should be maintained.

(FROM THE REPORT OF JOHN P. WHITE)

We agree fully with the statement of the majority report concerning the importance of irregularity of mining operations as a cause of unsatisfactory working conditions as well as of high prices.

It is admitted common belief, and that belief has been fostered and encouraged with the intent of discrediting labor, that the miner himself is largely responsible for the notorious unemployment record in the industry. But from a careful analysis of the reports of the Geological Survey it becomes evident that the miner, as a rule, is clearly

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the victim rather than the cause of the unfortunate conditions which have led the majority to speak of the bituminous industry as a part-time industry. A conservative estimate would place one-fourth of the unemployment beyond his control. And with this statement it must be recognized that were the mine workers to work on the days when idleness is recorded against them they would be faced with compensatory days of idleness some time later, nor the industry only produces long enough to satisfy the market.

To put the matter most charitably, the majority report shows great inconsistency in that, while recognizing the inability of the market to absorb full production, it still implies that a solution can be reached by regularizing the market. In other words, the presumption is that unemployment can be eliminated by being distributed. The casual reader of the majority report will undoubtedly assume that regularization of the market will provide full-time employment for the mine worker. In reality the voluminous suggestions for regularizing the market, put forward in the majority report, will amount to a regularizing of the 30-hour week, or to an award of a five-day week, with six hours per day.

But here lies the evil of the suggestion carried in the majority report. While actually recommending readjustments which will mean such a regularization of the 30-hour average week actually necessary to meet the production requirements, it avowedly awards a 48-hour week and of course bases its wage award upon that number of working hours. In other words, while verbally accepting the principle of the living wage, it actually fails to afford the worker an opportunity to earn this living wage when so based upon a hypothetical 48-hour week. This arrangement of the award closely approximates hypocrisy.

It is because the wage award suggested in the majority report will be conceived and judged upon the basis of a 48-hour week that we wish to stress the present improbability of a week of more than 30 hours whatever the award may say. This discrepancy between the week actually awarded and the week which will be worked is the true measure of the unfairness of the award.

In the face of these facts we feel that the request that the actual facts of the industry be recognized and that the wage increase be related to the fact that an average week of 30 hours will produce all the coal required by the country is fundamentally just. Failure to face a situation in which 30 hours a week will be averaged whether it is officially sanctioned or not is merely juggling with solutions in order to avoid the true issue.

The majority report has carefully provided that labor shall be paid on the supposition that it works an average 48-hour week, and the public will call it a fair wage on that basis. The difference between the hypothetical 48-hour week and the actual average 30-hour week represent a part of the year for which the majority report makes no provision so far as labor is concerned. On the other hand, it ignores the fact that the nation is called upon to pay profits and maintenance to capital on the basis of its normal employment being a 30-hour week. Capital is to get its full normal remuneration, although it works but 30 hours per week on the average. That is to say, the majority report tacitly awards the companies a 30-hour week while denying it to the mine workers.

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PIPE CREEK, OHIO
How to Increase the Heat Value of Coal

IT HAS been established beyond doubt that thousands of tons of coal are wasted annually in the United States through the loss of heat involved in the use of faulty stoves, furnaces, etc., or the improper operation of those which are not faulty.

The following rules for various classes of coal consumers, particularly domestic appliances, if followed carefully will result in better satisfaction and increased economy.

For Hot-Air, Steam, Hot-Water Plants, or Kitchen Ranges:

1. There must be a CHECK DRAFT-DAMPER IN THE SMOKE-PIPE, besides the turn-damper. This check draft-damper controls the rate at which the fire burns as the throttle controls an engine. Open it to check fire. Close it to increase draft. Experiment with it. Make it do its work. Don't open coaling-door. If you cannot check draft without opening coaling-door, you need proper dampers.

2. The turn-damper should fit smoke-pipe loosely. With the average heater it should be kept nearly closed.

3. Just enough draft and that from below, checking draft by LETTING MORE AIR INTO SMOKE-PIPE, is one of the best general rules. This furnishes oxygen, necessary for consumption of gases, and gives time for them to burn before being drawn up chimney. This method also avoids escape of coal gas into cellar. To increase draft open only the draft-damper in ash-pit door. Opening the whole ash-pit supplies air faster than needed. The air is heated, passes up chimney and is heat wasted.

4. Make use of damper in coaling-door ONLY TO LET OXYGEN IN TO CONSUME GASES, if you use soft coal, after fresh fuel has been added.

5. Grates should be cared for diligently. A short, quick stroke of shaker will sift ashes through the grates. Clean ash-pit daily, to prevent damage to grates. In severe weather, shake only until a glow appears in ash-pit. In mild weather leave bed of ashes on top of grates. Leave grates in that position when through shaking. Avoid poking fire-bed. It causes draft holes and clinkers. Never shake a low fire until you put on a little fresh coal and give it time to ignite.

6. All heat pipes in cellar should be covered with asbestos. Weather-strips, storm windows and doors save heat.

7. Turn off heat in unused rooms. Bedrooms should be much cooler than living rooms. Don't try to heat all rooms all the time. If you have a hot-water system, make heavy radiator slip-covers and put over radiators not in use, to prevent freezing. Leave valve open.

8. Place two pans or open-top jars of water on radiators or in front of registers to keep air in the home moist. Study rules applying to system in your house. Sift the ashes.

Hot-Air Furnaces—Specific Rules.

1. Have fire-box gas-tight. All cracks must be cemented or a new section put in. Otherwise coal-gas will be carried to the rooms.

2. Regulate window of cold-air box so as to avoid too great a current of outside air, especially on very cold days.

3. Keep water container in air-jacket filled. Set jars of water near registers that send out most heat.

4. Hot-air pipes should pitch well upward from fur-

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Steam Heaters—Specific Rules.
1. Water in heater should be changed at least every week and replenished from supply-pipe. Cleanness of boiler is of prime importance.
2. Look at glass-water-gage whenever you attend fire. Keep water-gage half full of water. More than half uses steam space. Less than half may damage heater.
3. If you have not good air-valves, get the best at once. They are the worst source of trouble on steam heaters.

Hot-Water Plants—Specific Rules.
1. Water should be emptied from plant and clean water put in at least every spring and autumn. Water must be kept hot, open air valve of each radiator, with key, until all air is expelled and water begins to flow. Repeat occasionally to make sure no air interferes with circulation of water.
2. Water should always show in glass gauge of expansion tank—usually located in top story of house above level of all radiators.

Kitchen Ranges—Specific Rules.
1. A range needs little shaking. Clean ash-pit daily to prevent damage to grates.
2. When fire is low, put on a little fresh coal and give it time to ignite before shaking. Don't poke the fire.
3. If lid must be removed to check fire, take off lid from water-box. Never remove lid directly over fire.
4. Clean entire stove inside, frequently and thoroughly, particularly under oven and on top of oven.
5. Keep fire-box full to oven top.
6. Keep bottle of water on stove to make the fire moist. Study General Rules for all household coal-burners.

Cost of Production.
The Federal Trade Commission has obtained reports from 1,583 bituminous coal operators throughout the country for the month of January, 1920, and the commission says these reports show that the average cost of production of bituminous coal in that month was $2.32 a net ton. The average cost as announced by the commission by states was as follows:

**ILLINOIS.**
- District No. 1: $2.84
- District No. 2: $2.19
- District No. 3: $1.48
- District No. 4: $1.34
- District No. 5: $2.46
- District No. 6: $2.69

**INDIANA.**
- District No. 1: $2.67
- Brazil Boak: $2.18

**MARYLAND.**
- Average for State: $2.60

**OHIO.**
- District No. 1: $2.28
- District No. 2: $2.51
- District No. 3: $2.68
- District No. 4: $2.83
- District No. 5: $2.83
- District No. 6: $2.54
- District No. 7: $2.15
- District No. 8: $2.57
- District No. 9: $2.76

**PENNSYLVANIA.**
- Southwest District: $2.22
- Central District: $2.35

**WEST VIRGINIA.**
- Pocahontas: $1.98
- Tug River: $2.33
- Thurmond: $2.35
- Kenova: $2.30
- Logan: $2.40
- New River: $2.54
- Kanawha: $2.23
- Putnam County: $3.15
- Coal & Coke and Gauley: $2.36
- Fairmont: $2.36
- Pittsburgh Steam District: $2.12
Where the Coal Comes From

This complete list of coal mines in the sub-district territory, compiled from records of the Ohio and West Virginia Mine Bureau, embraces mines in Belmont, Harrison and Jefferson counties, Ohio; Marshall, Ohio and Brooke counties, West Virginia.

American Sheet & Tin Plate Co., Pittsburgh, Pa.—Aetna Standard mine, Bridgeport, O.
American Sheet & Tin Plate Co., Pittsburgh, Pa.—Laughlin mine, Martins Ferry, O.
William Arn, Holloway, O.—Arn mine, Holloway, O.
Atkinson Coal Co., R. D. I., Martins Ferry, Ohio.—Atkinson mine, Yorkville, O.
The Badger Mining Co., Bethesda, Ohio—Badger mine, Bethesda, Ohio.
Bakewell Coal Co., Bellaire, O.—Knob mine, Bellaire, O.
Barton Coal Co., Cleveland, Ohio—New Taggart mine, Barton, Ohio.
Beaver Coal Co., Bellaire, Ohio—Wolf Mine, Barton, Ohio.
Hat Beckner, Bland, Ohio—Eureka mine, Bland, Ohio.
Bellaire Coal Co., Bellaire, Ohio—Pitch Run mine, Bellaire, Ohio.
P. P. Read, Fishing, Ohio—Bethel mine, Fishing, Ohio.
The Bethesda Coal Co., Bethesda, Ohio—Bethesda mine, Speidel, Ohio.
Burr Ohio Coal Co., Baileys Mills, Ohio—Cochran mine, Baileys Mills, Ohio.
Bridgeville-Barton Coal Co., Bridgeville, Ohio—Denham mine, Barton, Ohio.
Brooks & Frye Coal Co., Bellaire, O.—Gillhooly mine, Bellaire, O.
Brooks Run Coal Co., Bellaire, O.—Brooks Run mines 2 & 3, Bellaire, O.
George Buchanan, Tiltonville, O.—Spoonhall mine, Yorkville, O.
H. C. Burdett, Barnesville, O.—Burdett mine, Barnesville, O.
Ayers & Gallagher, Fairpoint, O.—Ideal mine, Fairpoint, O.
Cambria Collier Co., Ohio Bldg., Toledo, O.—Putney mine, Belleair, O.
Cambria Collier Co., Toledo, O.—Webb mine, Webb, O.
Carnegie Steel Co., Pittsburgh, Pa.—Carnegie mine, Belleair, O.

Jas. Cauth, Bellaire, O.—Caruth mine, Bridgeport, O.
Central Ohio Mining Co., Cleveland, O.—Clifford mine, Dillie Bottom, O.
Chini & Chini, Fishing, O.—Tyrol mine, Fishing, O.
Christy Coal Co., St. Clairville, O.—Christy mine, Maynard, O.
Clarkson Coal Mining Co., Rockefeller Bldg., Cleveland, O.—Clarkson Mine No. 1, Clarkson, Ohio; Clarkson Mine No. 2, Fairpoint, O.

Cleveland-Belmont Coal Co., Cleveland, O.—Virginia Hill Mine, LaFayette, O.

Collins Coal Co., Neilsonsville, O.—Media mine, Baileys Mills, O.; Murphy Mine No. 1, Baileys Mills, O.
Commonwealth Coal Co., Magree Bldg., Pittsburgh, Pa.—Downtown Mine, Martins Ferry, O.
Crabapple Coal Co., Cleveland, O.—Crabapple Mine, Fairpoint, O.; Crabapple Mine, Drift No. 2, Bannock, O.

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M. C. Craig, St. Clairsville, O.—Craig Mine, St. Clairsville, O.
Roland E. Crossley, Blaine, O.—Crossley Mine No. 2, Blaine, O.
E. J. Degarino, Lafferty, O.—Dodge Mine, Lafferty, O.
Frank Denbaugh, Barton, O.—Denbaugh Mine, Barton, O.
Dolan Coal Co., Bethesda, O.—Dolan Mine, Bethesda, O.
George W. Denley, Belleair, O.—Denley Mine, Belleair, O.
Doughty Coal Co., Bellaire, O.—Doughty Mine, Bellaire, O.
Fairview Coal Co., Rockefeller Bldg., Cleveland, O.—Fairview Mine, Crescent, O.
E. J. Froelich, Freeport, O.—Froelich Mine, Freeport, O.
O. H. Ganzler Coal Co., Bethesda, O.—Gill Mine, Trols, O.
Great Lakes Coal Co., Spahr Hill, Columbus, O.—Great Lakes Mines Nos. 3, 4 and 5, Trols, O.
Gensler & Peit, Lafferty, O.—Henderson-Taylor Mine, Lafferty, O.
E. Graham, Holloway, C.—Graham Mine, Holloway, O.
Ed. Harris, Holloway, C.—Harris Mine, Holloway, O.
Heller & Gordon Coal Co.—Heller Mine, Bridgeport, O.
Headysburg Coal Co., Headysburg, O.—Headysburg Mine, Barnesville, O.
Hess & Clark, Neffs, O.—Locust Ridge Mine, Holley, O.
Holloway Coal Co., Cleveland, O.—Locust Mine, Maynard, O.
Jos. Horwath, Maynard, O.—Horwath Mine, Maynard, O.
Jos. Hosenfield, Martins Ferry, O.—Hosenfield Mine, Yorkville, O.
James Krabik, Maynard, O.—Krabik Mine, Maynard, O.
W. M. Huntsman, Maynard, O.—Huntsman Mine, Maynard, O.
Hutchison Coal Co., Fairmont, W. Va.—Kirkwood Mine, Bridgeport, O.
Industrial Coal & Coke Co., Steubenville, O.—Stripping Mine, Bannock, O.
Kean Jenkins, Maynard, O.—Jenkins Mine, Maynard, O.
R. J. Kenna, Coal Co., Barnesville, O.—Kenna Mine, Barnesville, O.
The Kenna Coal & Mining Co., Cleveland, O.—Kenna Mine, Flushing, O.
John E. Klee, Belleair, O.—Klee Mine, Belleair, O.
Paul Koosky, Belleair, O.—Koosky Mine, Yorkville, O.
Lake Shore Coal Co., Cleveland, O.—Hardesty Mine, Barton, O.
Leah Coal Co., St. Clairsville, O.—Leah Mine, Maynard, O.
Lorain Coal & Dock Co., Columbus, O.—Wheeling Creek (Boyd Opening) (High Side) Mine, Bridgeport, O.; Lauseng Mine, Blaine, O.; Crescent Mine No. 3, Crescent, O.; Crescent Mine No. 4, Crescent, O.; Blaine (South Side) Mine, Blaine, O.; Blaine (North Side) Mine, Blaine, O.; Stanley Mine No. 6, Barton, O.
William Lynn, Bethesda, O.—Roby Mine, Bethesda, O.
R. E. Malden Coal Works, Barnesville, O.—Malden Mine, Barnesville, O.
Massillon-Belmont Coal Co., Massillon, O.—Bethel Mine, Flushing, O.
Rizzi Mattuci, Belleair, O.—Mattuci Mine, Brooks Run, O.
The A. J. Morgan Coal Co., Belleair, O.—Franklin Mine, Stewartsville, O.; Johnson Mine, Johnson, O.; Taulin Mine, Bannock, O.
A. J. Morris, Flushing, O.—Morris Mine, Flushing, O.
The National Coal Co., Cambridge, O.—Loomis Mine, Lamira, O.
Alex Neffs Coal Co., Neffs, O.—Neff Mine, Neffs, O.
Nixon Run Coal Co., Martins Ferry, O.—Lewis Mine, Martins Ferry, O.
North Belmont Coal Co., Cleveland, O.—Tunnel Mine, Flushing, O.
Oco Coal Co., 1406 E. 36th St., Cleveland, O.—No. 1 Mine, Lafferty, O.
Ohio & West Virginia Coal Co., Martins Ferry, O.—O. & W. Mine, Martins Ferry, O.
Wm. Palmer, Barnesville, O.—Rob Mine, Martins Ferry, O.
J. A. Frasier Coal Co., Cleveland, O.—Lacy Mine, Stewartsville, O.

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Paxton Coal Co., Bridgeport, O.—Paxton Mine, Bridgeport, O.

Paxton & Weidetz, Martins Ferry, O.—Paxton & Weidetz Mine, Bridgeport, O.

Pittsburgh & Cleveland Coal Co., Cleveland, O.—Gaylord No. 1 Mine, Martins Ferry, O.; Gaylord No. 2 Mine, Martins Ferry, O.; Liberty Mine, Stewartsville, O.

Pittsburgh Superior Coal Co., Shadyside, O.—Cook Mine, Wegees, O.

John Pess—Pess Mine, Maynard, O.

Progressive Coal Co., Cleveland, O.—Pauline Mine, Bannock, O.; Progressive Mine, Belleire, O.


Rail & River Coal Co., Cleveland, O.—Rail & River Mine No. 1, Beldaire, O.; No. 2 Mine, Dillies Bottom, O.; No. 6 Mine, McClainsville, O.

Rosemary Coal Co., Cleveland, O.—Rosemary Mine, Flushing, O.; Drift No. 2 Mine, Flushing, O.

St. Mary's Coal Co., Beldaire, O.; Kirkwood No. 2 Mine, Bridgeport, O.

Shadyside Coal Co., Shadyside, O.; Wolforth Mine, Bridgeport, O.

Mary J. Sheets Coal Co., Martins Ferry, O.—Sheets Mine, Martins Ferry, O.

Sherrard & Shepheard, Flushing, O.; Shepheard Mine, Flushing, O.

Schick Cooperative Coal Co., Beldaire, O.; Schick Mine, Beldaire, O.

C. E. Schick, Beldaire, O.—Black Oak Mine, Beldaire, O.; Somers Coal Co., Cleveland, O.; Lorenna Mine, Maynard, O.

E. E. Spradling, Beldaire, O.—Spradling Mine, Beldaire, O.


Stark & Ohio Mining Co., St. Clairsville, O.—Sutton Mine, Lafferty O.; Berry Mine, Maynard, O.

J. L. Sutton, Lafferty, O.; Sutton Mine, Lafferty, O.; Steve Szez, Maynard, O.; Seitz Mine, Maynard, O.

R. W. Taylor, Bethesda, O.; Taylor Mine, Maynard, O.; Tread Coal Mining Co., St. Clairsville, O.—Tread Drift No. 1, Fairport, O.; Drift No. 2, Fairport, O.

Union Coal & Mining Co., Cleveland, O.—Clyde Mine, Lafferty, O.

Valley Camp Coal Co., Cleveland, O.—Columbia No. 1 Mine, Fairport, O.; Columbia No. 2 Mine, Fairport, O.

Valley Grove Coal Co., Beldaire, O.—Ohio Mine, Stewartville, O.

John West, Barnesville, O.—Davey Mine, Barnesville, O.

Wheeling & Lake Erie Coal Co., Cleveland, O.—Dillon No. 5, Cleland's Mills, O.; Dillon No. 6, Lafferty, O.; Dillon No. 7, Neffs, O.; Dillon No. 8, Neffs, O.

Wheeling Twp. Coal Co., Rockefeller Bldg., Cleveland, O.—Wheeling Valley Mine, Tread, O.

Whitaker-Glessner Coal Co., Wheeling, W. Va.—Whitaker-Glessner Mine, Martins Ferry, O.

Witchley Bros. Coal Co., Beldaire, O.—Rose Mine, Neffs, O.

W. H. Wolf, Beldaire, O.—Wolf Mine, Beldaire, O.

Yorkville Coal Co., Wheeling W. Va.—Holl Mine, Yorkville, O.

Youthloheeny & Ohio Coal Co., Cleveland, O.—Barton R. Mine, Barton, O.; Boggs Mine, Barton, O.

H. R. Anderson, Cadiz, O.—Anderson Mine No. 3, Cadiz, O.

Apex Coal Co., 629 Rockefeller Bldg., Cleveland, O.—Apex Mine No. 1 (Strip), Germano, O.

Bates-Williams Coal Co., Hopedale, O.—Effie Drift No. 1, Hopedale, O.

C. W. Brewer, Cadiz, O.—Brewer Mine, Cadiz, O.

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Stellar Coal Mining Co., Adena, O.—Stellar Mine, Drift 13, Adena, O.
Stillwater Coal Mining Co., Cleveland, O.—Tippaeano Mine, Tippaeano, O.
Harry Walker Coal Co., Dillonvale, O.—Walker Drift 1, Adena, O.; Walker Drift 2, Adena, O.
J. F. Warner, Bowerston, O.—Warner Mine, Bowerston, O.
Wayne Coal Co., Pittsburgh, Pa.—Wayne Mine No. 4 (Stripping), Hopedale, O.
Adena Coal Co., Adena, O.—Adena Stripping Mine, Adena, O.
Apex Coal Co., Cleveland, O.—Apex No. 2 (Strip), Germano, O.—Apex No. 7 Mine, Apex, O.
Samuel Bailey, Mingo Junction, O.—Bailey Mine, Mingo, O.
Bananza Coal Co., Wheeling, W. Va.—Bananza Mine, Smithfield, O.
Benson Coal Co., Steubenville, O.—Benson Strip Mine, Hopedale, O.
Beallare Mining Co., Bellaire, O.—Bellaire Drift 123, Adena, O.
Belknap Coal Co., Wheeling, W. Va.—Belknap Strip Mine, Smithfield, O.
Henry Pickersgill, Mingo Junction, O.—Pickersgill Mine, Mingo, O.
Black Gem Coal Co., Smithfield, O.—Mrape Mine, Smithfield, O.
Brettell Bros., Mingo Junction, O.—Brettell Mine, Steubenville, O.
Brilliant Coal Co., Brilliant, O.—Bunny Mine, Salt Run, O.
Buck Coal Co. Ltd., Canton, O.—Gem Mine, Dungloe, O.
Eli T. Cantner, Steubenville, O.—Eli Mine No. 1, Steubenville, O.
The Official Miner's Service Record and History

Consolidated Coal & Coke Co., Brilliant, O.—C. C. C. Mine, Brilliant, O.
Consolidated Fuel Co., Pittsburgh, Pa.—Goucher Mine No. 2, Brilliant, O.; Kelly Mine, Warrenton, O.
J. D. Cox & Son, Brilliant, O.—Cox Mine, Brilliant, O.
Creek Coal Co., Steubenville, O.—Coal Hill Mine, Steubenville, O.
Neal J. Dunn, Steubenville, O.—Hilltop Mine, Steubenville, O.
Electric Coal Co., Rush Run, O.—Beech Flats Strip Mine, Rush Run, O.
James Ervin, Mingo Junction, O.—Ervin Mine, Steubenville, O.
E. E. Foster, Smithfield, O.—Foster Mine, Smithfield, O.
Glen Run Coal Co., Cleveland, O.—Edgar Mine No. 3, Dillievale, O.; Edgar No. 2, Dillievale, O.; Rush Run No. 4, Rush Run, O.
P. C. Haynes, Cleveland, O.—Haynes Mine, Dillievale, O.
Henry Bros. Coal Co., Steubenville, O.—Henry Mine, Dillievale, O.
Harry Hicks, Smithfield, O.—Hunter Mine, Smithfield, O.
Holland Coal Co., Martins Ferry, O.—Jenice Mine, Tiltonville, O.
Hollow Rock Mining Co., Wheeling, W. Va.—Hollow Rock Mine, Yellow Creek, O.
Hudson Coal & Coke Co., Rush Run, O.—Hudson No. 1 Mine, Rush Run, O.
Jean Coal Co., Cleveland, O.—Jean Mine, Salt Run, O.
Jefferson Coal Co., Cleveland, O.—Piney Fork Mines Nos. 1 and 2, Piney Fork, O.; No. 3 (Cabbage Run), Piney Fork, O.
Jefferson Coal Co., Cleveland, O.—Piney Fork Mine No. 3, Tiltonville, O.
A. C. Jones Coal Co., Yorkville, O.—Jones Mine, Yorkville, O.
Kauf Mfg. Co., Toronto, O.—Kauf Mine, Toronto, O.
LaBelle Iron Works, Steubenville, O.—LaBelle Shaft Mine, LaBelle, O.
Chas. Lash, Mingo Junction, O.—Reber Hill Mine No. 2, Mingo Junction, O.
Lewis & Selby Coal Co., Martins Ferry, O.—New Alexander Mine, Mingo Junction, O.
Herman Liller, Raceland, O.—Large Mine, Rayland, O.
Orville, McManus, Harrisville, O.—Bruce Mine, Adena, O.
Wm. Mahan, Canton, O.—Buck Mine, Dillievale, O.
C. W. Morey, Dillievale, O.—Maurer Mine, Dillievale, O.
Samuel Moody, Mingo Junction, O.—Moody Mine, Mingo Junction, O.
Morris-Foster Coal Co., Cleveland, O.—Duglen Mines Nos. 1 and 2, Duglen, O.
E. R. Nicholson, Dillievale, O.—Nicholson Mine, Dillievale, O.
Ohio & Penn Coal Co., Cleveland, O.—Walnut Hill Mine No. 1, Yorkville, O.; West Pittsburgh Mine No. 2, Amherst, O.
Finey Fork Coal Co., Columbus, O.—Finey Fork Strip Mine, Smithfield, O.
St. Clair Coal Co., Steubenville, O.—St. Clair Mine, Steubenville, O.
Saltine Coal Co., Steubenville, O.—Saltine Mine, Hammondsville, O.
Steubenville Coal Mining Co., Steubenville, O.—High Shalt Mine, Steubenville, O.
Sugar Hill Coal Co., Steubenville, O.—Sugar Hill Mine, Steubenville, O.
Superior Coal Co., Wheeling, W. Va.—Superior Strip Mine, Chandlers, O.
E. A. Thomas, Steubenville, O.—Robert Hill No. 3 Mine, Steubenville, O.
U. S. Coal Co., Cleveland, O.—Plum Run Mines Nos. 1, 2, 3 and 4, Cow Hollow, District 1, 2, 3 and 4, Smithfield, O.
Henry Vorbilt, Tiltonville, O.—Tiltonville Mine, Tiltonville, O.

Mr. Simpson has been general manager of the Jefferson Coal Co. since its organization more than 20 years ago. He was born in England and came to this country when a mere lad. In the early sixties he started working in the mines in the Monongahela River district of Pennsylvania. He was always active in the affairs of the miners and was a member of the old Knights of Labor. His wide experience in the mining business in Pennsylvania and Ohio has made him one of the most prominent men in the industry.

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Williams Coal Co., Steubenville, O.—Williams Mine, Steubenville, O.
Witch Hazel Coal Co., Youngstown, O.—Florence Strip Mine, Florence, O.
Woodward Coal Co., Kent, O.—Woodward No. 1 Mine, Smithfield, O.
Yellow Creek Coal Co., Willsville, O.—Buckeye Mine, Yellow Creek, O.
Y. & O. Coal Co., Cleveland, O.—Bed Mine, Rayland, O.;
Dorothy Mine, Rayland, O.
Ferguson Coal & Coke Co.—Ferguson Mine, Cliftonville, W. Va.
Glidden Coal Co.—Maison Mine, Wellsburg, W. Va.
Louise Coal Co.—Louise Mine, Cliftonville, W. Va.
Richland Block Coal Co.—Beech Bottom Mine, Windsor, W. Va.
Ben Franklin Coal Co.—Panama Mine, Moundsville, W. Va.
Glendale Coal Co., Glendale Mine, Glendale, W. Va.
Elm Grove Coal Mining Co.—Wheeling, W. Va.—Elm Grove Mine No. 1, Elm Grove; Elm Grove 2 and 3, Triadelphia, W. Va.; Glendale Mine, Glendale, W. Va.

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The Eastern Ohio Coal Field

By CHARLES J. ALBASIN,
(Secretary of the Pittsburgh Vein Operators’ Association)

The coal industry of Eastern Ohio dates back to Civil War days, when the first commercial mine in the district, the old Weegee, below Belfaire, was opened. Prior to the great sectional struggle, so far as records show, there was no coal mined in what is now the fifth sub-district of Ohio. The old Weegee mine, by the way, is still in existence, being the oldest mine in this section. It is now known as the Cook mine and is operated by the Pittsburgh Superior Coal Co. It is located near the present Weegee mine. Another old mine, still in existence, is the Rail & River No. 1. It was opened shortly after the old Weegee was in its most successful period of operation, penetrating the Ohio hills to a depth of five miles.

Railroads vs. River.

Little progress was made in the development of the industry until the C. & P. and C. L. & W. railroads came in to open up the field. Prior to that time, all the coal was loaded onto barges. This made the operation of mines other than along the river too expensive an undertaking. The first mine opened on the C. & P. was the Haney mine, now the Gaylord No. 1, while the Wheeling Creek mine, at Wheeling Creek, and the Kennon mine at Flushing, were the first to load coal on the C. L. & W.

At this time all the mining was done by pick and shovel, and the development of the industry was slow. New mines were opened from time to time, but it was not soon seen by the leaders in the industry that a faster method of getting out the coal would have to be devised to keep abreast of the times. This same problem was confronting those in the industry in every part of the country, and numerous experiments had been made with mechanical mining devices.

About 1896 punching machines were introduced at the Johnson mine at Dilles Bottom, and the Glen Hope mine at Glenville, but they were not successful, and although their operation was continued for some time, they were eventually abandoned.

Machines Bring New Era.

The first real machine mining in this section was done in Jefferson county, when chain machines, of considerably the same type as now used, were introduced in the Long Run mine of the Wheeling & Lake Erie Coal Mining Co. The machines were a success from the start, but their introduction was bitterly opposed by the miners. At the time of their introduction there were employed in this section from 1,500 to 1,800 miners, producing less than 1,000,000 tons of coal per year. They viewed with alarm the introduction of the machines, for they believed they were so greatly increase the output of the mines that many of them would be thrown out of employment. However, the direct opposite was the result. With increased production efficiency in the mines and improvements in transportation the business of the section developed, and the industry began a good, healthy growth. Year by year the output increased, year by year the demand for Eastern Ohio coal increased and more men came to the mines.

Tremendous Increase.

In 1913, after the machines had gotten well established, the annual output of the section had reached the 15,000,000 ton mark. This continued increasing until the great year of 1918 when 24,000,000 tons were mined in this section, the greatest production on record. It dropped back to approximately 20,000,000 tons in 1919, due to war shortage, a temporary suspension of demand and other causes.

During 1918 a greater number of tons of coal were produced in the Eastern Ohio section during any previous period in the history of the industry. In the state of Ohio alone approximately 50,000,000 tons were mined. Ohio showed a greater percentage of increase than any other large mining state. Ohio's gain over 1917 was 14 percent; Illinois, 6 percent; Pennsylvania, 6.5 percent; West Virginia, 2.6 percent.

Where the Coal Goes.

During the summer months 90 percent of the coal mined in this section goes to the Lake Trade, large consumers in the northwest and to the railroads. In this connection it is interesting to note that it is estimated that during 1918 Ohio industries and homes consumed approximately 70,000,000 tons of coal, so that if Ohio used nothing but Ohio coal the present output would have to be increased nearly 50 percent to supply the home consumption.

It may not be generally known that Belmont county is the greatest coal producing county in Ohio and one of the greatest in the United States. Possibly the only counties in the nation which turn out a greater annual volume of coal are Fayette and Allegheny counties, Pennsylvania.

Belmont Leads State.

Belmont county, led by a big margin, the coal producing counties of the state last year, with a total output of 9,975,563 tons. This was a reduction of approximately 30 percent from the output of 1918, when 12,185,253 tons were produced. The output of the leading coal counties of the state, after Belmont county, during 1919 follows: Athens, 5,141,833; Jefferson, 4,753,654; Guernsey, 3,530,315; Perry, 2,057,438; Tuscarawas, 1,274,182; Harrison, 1,274,467; Hocking, 1,144,963. Both Belmont and Jefferson counties, by the way, are in this sub-district.

From a working force of less than 2,000 men back in 1898 the industry has grown to a point where it now employs an army of approximately 20,000 men.

What of the Future?

There seems to be an erroneous impression among people not familiar with the coal industry that most of the coal has been worked out in Eastern Ohio. As a matter of fact, possibly not more than 12 percent of the coal has been removed. In Belmont county, of course, the percentage rules higher than this, but in the section as a whole, there still remains about 88 percent of the No. 8 coal in the hills. With this fact borne in mind it would seem, considering the present position of the section in the coal industry, that the Eastern Ohio field is destined to continue for many years in a high position among the coal producing sections of the country.

SHEETS COAL CO.
MARTINS FERRY, OHIO.

Local Union No. 2688
The Local Unions

Herewith is presented detailed information concerning the war record and history of the various local unions of the sub-district. The information was compiled directly from reports of officers of the various local unions. Unfortunately, a number of instances the locals failed to keep records and much valuable and interesting matter is, therefore, lost. However, the assembled data constitutes the most complete and authentic record in existence of the history and achievements of Subdistrict 5 local unions.

Local Union 44, Glencoe, O.

This local union has a membership of 219 men, employed at Mines 1, 2, and 3 of the Paraglove-Miller Coal Co., home office, Cleveland, O. The present officers of the union are: George S. McMillan, President; Charles Scarpini, Vice-president; Charles Scarpini; Recording and Financial Secretary, N. J. Morris; Treasurer, Joe Machuchy. Every member of the local is an American citizen, although by nationalities there are 80 Italians, 33 Hungarians, 33 Polish and 6 Italians. The officers are: President, Eddie Wilson; Vice-president, Mike Goebel; Recording Secretary, T. Ryan; Financial Secretary, Carl Ryan. Eighty-six men are employed at Gaylord No. 1 mine, of the Sauter's Coal Co., of Cleveland, located about two miles above Martins Ferry, O.

Local Union 71, Martins Ferry, O.

Local Union 71 was established nearly 30 years ago. At present it has a membership of 178, ninety of whom are American citizens. The nationalities in addition to the native-born, are represented—20 Hungarians, 32 Poles and 6 Italians. The officers are: President, Charlie Wilson; Vice-president, Mike Goebel; Recording Secretary, Tom Ryan; Financial Secretary, Carl Ryan. The men are employed at Gaylord No. 1 mine, of the Sauter's Coal Co., of Cleveland, located about two miles above Martins Ferry, O.

Local Union 83, Flushing, O.

Local Union 83, Flushing, O.

Although boasting a membership of but 30 men this local made an impressive record during the war. The members invested approximately $4,500 in Liberty Loan bonds and $300 in Thrift and War Savings Stamps, in addition to donating $100 to the Red Cross and $25 to the War Chest fund.

Two members served in the war, neither of whom was wounded.

There are 27 Americans, (eight colored), two Austrians and one Italian in the local's membership. The officers are: President, Refus Hickman; Secretary, Clyde Merritt. Mr. Merritt was also secretary of the local draft board in his district.

Local Union 93, Weege, O.

Members of this local, employed at the Cook mine of

The Bakewell Coal Company

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BelEaire, Ohio
LOCAL UNION 116, WARNOCK, O.

Out of a very small membership, 62, this local union sent eight men to war, but all came through safely. In the matter of war loans the members invested $600 in the First Loan, $700 in the second, $800 in the Third, $3,150 in the Fourth, and $3,200 in the Fifth. The local also bought $1,800 worth of War Savings Stamps and members gave $200 to the Red Cross. Joe Baroni is president of the local.

LOCAL UNION 123, BLAINVILLE, O.

There are 180 members in this local, employed at the Little Italy mine north of Maynard on the Wabash railroad, owned by the Goodrich Rubber Co. But 60 of the members are American citizens. The nationalities represented are: Polish, 40; Slavic, 20; Italian, 12; Russians, 20. Officers of the local are: President, George Klamant; Recording Secretary, Frank Panarese; Financial Secretary, James Zareck. The members bought Liberty bonds to the amount of $8,000 and War Savings Stamps, $1,700. They donated $300 to the Red Cross and $400 to the War Chest. Four members served in the war.

LOCAL UNION 183, HOPEDALE, O.

This local has a membership of 75, all citizens and 10. Seven Italians, two Hungarians and one Russian have not been naturalized. The men are employed at the Custer mine of the Hudson Coal Co.

The local was organized October 12, 1913. At that time there were but 25 members. The union has the unique distinction of not having suffered a fatality in the mine since its organization.

Nineteen members—Tom Ferro, Ferdinando Nazari, Charles Monahan, John Acme, Lawrence Shay, John Brown, Joseph Cooper and Lawrence Loomis—went to war. The local invested $7,000 in Liberty Loan bonds and donated to various war fund activities.

Officers of the local are: President, Charles Marrincoel; Vice-president, Tony Lazzari; Recording Secretary, Charles N. Christian; Financial Secretary, Almon Nation; Mine Committee, Luther Crove, Lawrence Loomis and Guy Scobba.

LOCAL UNION 193, NEFF, O.

This local has a membership of 264, employed at the Heilman mine of the Fursgrove-Mohr Co., at Neff. Fifty members of the local served in various branches of the service during the war, although but few Liberty Loan bonds were purchased during the first and Second Loans the men invested $7,500 in the Third Loan and $7,000 in the Fourth. John Hollick is president of the local.

LOCAL UNION 245, BARTON, O.

This local was organized in 1894, through the efforts of men who had previously assisted in laying the foundation for the United Mine Workers of America. The officers of the local are: President, John Mervel; Financial Secretary, Sam Zavasky; Recording Secretary, W. T. Roberts. It has a membership of 320, of whom about 40 are citizens. There are 100 Hungarians, 80 Slavish and about 200 German represented in the local. Twenty-two members of this local went to war, two of whom, Sergeant Isaac Vickers and John Stillman, did not return.

During the war members invested $1,500 in the Second Liberty Loan at $1,000 in the Third, $1,200 in the Fourth and $600 in the Fifth. The local bought $500 worth of War Savings Stamps and individual members $23,000 worth. The local also donated $50 to the Red Cross and individual members over $1,000 to this and similar causes.

LOCAL UNION 281, MARTINS FERRY, O.

Local 281 was organized in November, 1906. It has a membership of 136 men, employed at the Florence mine of the Younghigh & Ohio Coal Co., Cleveland, O. Officers of the local are: President, Andrew J. Tott; Secretary, James A. Votseak; Treasurer, Frank Sama; Mine Committee, Bartzi, Julius Giovannini. The local union did not invest in Liberty Loan bonds or War Savings Stamps, but the members did to the extent of $2,200 in the First Loan, $5,500 in the Second, $5,500 in the Third, $7,000 in the Fourth and $800 in the Fifth. They also put $8,300 into Stamps.

Fifteen members served in the war, one of whom, John Meldits, was wounded. Others in the service were: Joseph A. Votseak, Andy Fingerhat, Jr., Walter Nichols, Horace Hathaway, Harry Thoburn, Arch Thoburn, James Shuck, Vincent Soka, Andy Borak, Joseph Pekul, Joseph Bobaly, Joseph Skuba, Charles Cunningham, Harry Sumner. The local owns its own meeting hall, a two-story building, the first floor of which is rented as a storeroom.

LOCAL UNION 314, BARTON, O.

This local has a membership of 127, employed in the No. 2 mine of the Clarkson Coal Co., at Fairpoint. Officers of the local are: President, William Valkoskie; Financial Secretary, Zeke Guenther; Recording Secretary, S. Wiltas. The local has a splendid war record. Forty-five members served in the army during the war, two of whom, John Reid and Russell Howard, were killed in action. Members of this local invested over $36,000 in Liberty Loan bonds and $5,100 in War Savings and Thrift.
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Stamps. The local put $100 into Stamps and gave $25 to the Red Cross. Individual members gave approximately $1,000 to the Red Cross and War Chest fund.

LOCAL UNION 319, BARTON, O.

This is one of the oldest locals in the sub-district. The 129 members are employed at the Bogg's Mine on the St. Clairsville branch of the C. L. & W. railroad, now owned by the Y. & O. Coal Co. The mine was at one time, owned and operated by E. X. Bogg's, now operating stores at Crescent and Maynard. These were rough days in the mining game, and some of the old-timers in that section left vigorous records behind them. Among these were Bill Smith, a noted fighter, and Buffalo Lennox, a giant and a rough one at that.

Officers of the local at present are: President, Mike Elasz; Financial Secretary, Joe Mars; Recording Secretary, George McGonigal. Twenty-eight members were in the war, one of whom was killed and one wounded. The local invested $800 in Liberty Loan bonds and $500 in stamps, while individual members invested $4,000 in bonds and $7,000 in stamps. The local also donated $50 to the Red Cross. Members independently gave $38 to this cause.

LOCAL UNION 397, TILTONVILLE, O.

There are ninety-five men in this local, employed at the Russell mine of the Warren Collieries Co., of Cleveland. Officers of the local are: President, Oliver Rigot; Vice-president, Enrico Tossini; Recording Secretary, Louis Berto; Financial Secretary, John Berto. Twenty-five members of the local are citizens. The nationalities represented are: Hungarian, 35; Italians, 20; Roumanians, 15; Poles, 10; French, 5.

Three members of the local served in the war. Members invested their earnings in all five Liberty Loan issues, $500 in the First, $1,000 in both the Second and Third, $7,000 in the Fourth and $1,500 in the Fifth. They also put $290 into Thrift and War Savings Stamps and donated over $100 to various war relief funds.

LOCAL UNION 416, BARTON, O.

This local, established in 1908, has grown from one of the smallest in the sub-district to a membership of 150. The men are employed at the Taggart mine of the Barton Coal Co., of Cleveland. The local did not begin to grow until 1915 when, because of the falling in of the old mine, a new opening was made.

Officers of the local are: President, George W. Todd; Vice-president, Joe Swin; Recording Secretary, Joe Klier; Financial Secretary, George Klier. Of the members approximately sixty are citizens. There are Slavish, Polish, Greek and Hungarian in the membership. Seventeen men served in the war, two of whom were wounded. The soldiers list follows: James John, Joe and George Klier, Charles Triede, Cleve Robson, Steve Boh-

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the Bull & River No. 6 mine at McClainsville, O. Officers of the local are: President, James Miller; Secretary, Tony Shada. Thirty-one men from this union served in the Red Cross. Members of the local hold Liberty Bonds to the amount of nearly $27,000 and donated approximately $1,550 to the Red Cross and War Chest.

LOCAL UNION 459, LAFFERTY, O.

Although its membership totals but 80, this local, or its members, own Liberty Loan bonds to the amount of $7,000 and War Savings Stamps to the amount of $600. In addition to this they donated $225 to the War Chest fund. The men are employed at the Virginia Hill mine west of Lafferty on the B. O. railroad. Nine members served in the war, none of whom was killed or injured.

LOCAL UNION 499, STEWARTSVILLE, O.

The seventy-nine members of this local are employed at the Lucy mine of the Falstaff Coal Co., located about half a mile east of Stewartsville. Twelve of the men served in the army during the war. Members of the local bought $8,000 worth of Liberty Loan bonds and a quantity of War Savings Stamps. Officers of the local are: President, Peter Tragan; Secretary, Joseph M. Weckley.

LOCAL UNION 619, HERRICK, O.

This local was organized on March 23, 1917 and at present has a membership of 171 men. Employed at Michael Gallagher's Dillon mine No. 4 at Herrick. There are 29 Hungarians, 32 Slavs, 29 Russians represented in the membership. Officers of the union are: President, Charles Alex; Secretary, James Alex; Treasurer, Steve Bizil. During the war the members purchased over $2,000 worth of Liberty Loan bonds, investing $400 in the First, $250 in the Second, $300 in the Third, $400 in the Fourth and $600 in the Fifth. They also bought $150 worth of Thrift Stamps and gave $500 to the Red Cross. Five members served in the war, four in the Army and one in the Marines.

LOCAL UNION 652, KLEE, O.

The 68 members of this local union are employed at the Schick mine of the Schick Cooperative Co., Bellaire, O. Only two members served in the war. Isaac Redpath is president and Ralph Patterson secretary of the local. The local members bought bonds of the Third and Fourth Liberty Loan issues, $3,500 of the former and $2,380 of the latter; also $488 worth of War Savings Stamps. They donated $75.00 to the War Chest Fund and $99.75 to the Salvation Army.

LOCAL UNION 788, BENWOOD, W. VA.

The 300 miners of this local union are employed at the Benwood Mill mine of the Wheeling Steel & Iron Co., at Benwood. The local was organized in May, 1890. Members of the local's roster are American, 112; English, 7; Belgian, 2; Polish, 36; Italian, 24; Bohemian, 12; German, 7. One hundred and twenty-three of the members are citizens. Officers of the local are: President, Leopold Zerrott; Vice-president, William Parker; Secretary, Jas. Zastull; Treasurer, Jas. Cochrane. The members concentrated their Liberty Loan activities on the Third and Fourth Loans, subscribing to $10,000 worth of the Third issue bonds and $8,000 of the Fourth. The men also invested $400 in stamps, gave $1,440 to the Red Cross and $250 to other War works. The local union as a body, donated $1,000 to the Red Cross and $111 to other War funds. Twenty-eight members, as follows, served in the war: WM. Motile, Geo. Marling, Albert Dinkins, David Hovell, Andy Prchal, John Hiler, Joseph Dewor, George Williams, Joseph Kurzreihe, Patric Console, Thos. Fumma, Frank Vesa, Fred Ester, Salvador Maglione, Joseph Fumma, WM. Green, J.P. Bedaja, J.B. McMahon, Goff Flowers, Sam Dawson, Sam Oliver, Albert

LOCAL UNION 867, STEWARTSVILLE, O.

The members of this local, 100, are employed at the Big Five mine of the Pureglove-Maher Co., Cleveland, O. The mine is located near Stewartsville. A total of $3,656 was invested in Liberty Loan bonds, in the Third and Fourth issues. Five hundred dollars' worth of War Savings Stamps were also purchased. Nineteen members served in the war. Officers of the local are: Joe Alkens, president; Nelson Nish, secretary.

LOCAL UNION 971, YORKVILLE, O.

This is one of the old stand-by locals of the sub-district. It was organized on September 16, 1895. Its members comprise the miners of the Walnut Hill mine of the Ohio & Pennsylvania Coal Co., Cleveland, O., 196 in number. Officers of the local are: President, Jack Bell; Vice-president, John Maley; Recording Secretary, Thomas Edgar; Financial Secretary, William Cunningham; Treasurer, G. L. Bonar.

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When in the city, miners are invited to visit the Leader plant and make use of its columns.

Thomas Bell: Mine Committee; Robert Bell, Sam Rabish and John Buska. These are Serbians, Ukrainians, Russians and French among the men of this local, 67 of whom are American citizens. Nine men were sent to war; three of whom were wounded, and one of whom died of disease while in the service. The wounded men are Charles Bena, John Tanley and Albert Fry. Members of this local are the possessors of a large amount of Liberty Loan bonds. They bought $10,000 of the First issue, $8,500 of the Second, $4,500 of the Third, $1,500 of the Fourth and $4,000 of the Fifth. They also invested $5,500 in War Savings and Thrift Stamps. The local donated $250 to the Red Cross and other war works and the members individually $38.65.

The local has a hall equipped with a reading room and library and maintains a sick fund.

The men of this local believe they have the best conditions in the sub-district under which to work.

LOCAL UNION 966, Flushing, O.

This local has a membership of 150 men. They are employed at the Black Oak mine west of Flushing on the B & O railroad. Officers of the local are: President, John Watts; Financial Secretary, John Haglo; Recording Secretary, Ralph Montcloon; Treasurer, William Duvall.

LOCAL UNION 1272, Martins Ferry, O.

This has been a vigorous local for the past 25 years, and in its present membership of 200 there are represented eight nationalities besides the Americans—Italians, Hungarians, Poles, Canadians, Welsh, English, Romanians making up the list. The men are employed at the Loughlin mine of the American Sheet & Tin Plate Co. Officers of the local are: President, William Tanley; Vice-president, Dave Reece; Recording Secretary, Lawrence Hughes; Financial Secretary, Frank Jenkins.

Five members of the local were in the war; three in the Army and two in the Marine—John Woods, Rufus Brown, Mike Horvath, Thomas Grant and Walter Nichols. All returned safely.

The local put $1,500 into the First Liberty Loan, $2,000 into the Second, $3,000 into the Third, $5,000 into the Fourth and $2,000 into the Fifth. Sixteen hundred dollars went into Thrift Stamps and $1,250 to the Red Cross and other war relief funds.

The entire union insists that William King, 63, their veteran member, is the best pick worker in the valley. King drove every day in his life with a pick, until recently, and today can load coal to shame many a young man.

LOCAL UNION 1286, Stevartsville, O.

Members of this local are employed at the Franklin mine of the A. J. Morgan Coal Co., of Bellaire. There are 157 men in the local, with several nationalities represented. Officers of the local are: President, August Shane; Secretary, Martin Weekly. Eighteen members served in the war, two of whom were killed and three others wounded.

Bonds of the Third and Fifth Liberty Loans were purchased, $6,450 being invested in the former and $5,550 in the latter.

LOCAL UNION 1273, Piney Fork, O.

There are 185 members of this local, employed at the Piney Fork No. 2 mine of the Jefferson Coal Co. In the membership are 13 Hungarians, 60 Poles, 30 Italians and 20 Russians. The local was organized in 1901 and until 1912 embraced both No. 1 and No. 2 Piney Fork mines. At that time a separate local was established, each mine being run under a different local. Officers of the union are: President, James Morelli; Vice-president, Charles Magyar; Recording Secretary, William Foster; Financial Secretary, John Ash; Treasurer, Fred Francis. Members of the local invested approximately $25,000 in Liberty Loan bonds and $400 in War Savings Stamps. The local purchased bonds to the amount of $500. Fourteen members served in the war, one of whom was wounded. The members are: William Sampfield, Joe Bowers, Louis Poche, William Jones, Tony Vassar, John Eigela, Ben Delutis, Sidney Case, T. Meredith, John Salinka, Andy Bales, Frank Reitz, Victor Farrar, Harold Stewart.

LOCAL UNION 1342, Bannock, O.

There are 106 men in this local union, among whom are 25 colored men, 25 Italians, 15 Poles and 6 Austrians. Thirty-five of the 106 are American citizens. The men are employed at the Taplin mine, east of Bannock on the B. & O. railroad. Officers of the local are: President, Dominick Macri; Financial Secretary, John Djuse; Recording Secretary, George Brown. Ten members of the local served in the Army during the war, one of whom, Tony Rojenetz, was wounded in action. The members bought

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$11,000 worth of bonds of the Third Liberty Loan and $5,000 of the Fourth. They also invested $4,000 in War Savings Stamps and donated $200 to the Red Cross.

LOCAL UNION 1395, BANNOCK, O.
The 88 members of this local are employed at the Pauline mine at Bannock. Officers of the local are: President, Nick Hoadrjule; Secretary, Mike Parise; Financial Secretary, Joe Auguste. Eight members served in the war. The local and members invested $10,000 in Liberty Loan bonds and donated $200 to the Red Cross.

LOCAL UNION 1069, LANSING, O.
Local 1069 has a membership of 275, employed at the Lansing mine. Officers of the local are: President, John Lenox; Recording Secretary, Thomas Fowler; Financial Secretary, Bob Greenhouse. Thirty members of the local served in the war. None of these was killed or wounded, although one was taken prisoner and was held for some time by the Germans. Members subscribed to Liberty bonds to the amount of about $40,000. They also gave approximately $900 to the Red Cross and $300 to the War Chest fund.

LOCAL UNION 1696, PADDEN’S RUN.
There are 145 members in this local, employed at the Gaylord No. 2 mine, of the Sauters’ Coal Co., of Martins Ferry, O. The local was organized back in 1907, with about 15 or 20 members. Dave Love, present mine boss, was the first president of the local, and later James Maric, now inside boss, was also president. Only a few of the men who worked at the mine in 1907, when it reopened after a long shutdown, are employed there now. Among them are Peter and Robert Armitage, Marion Peterson, Harry E. Smith, William Scott. The local has long maintained a sick and accident fund, to which the members pay 25 cents per week.

President of the local are: President, Walter Jackovich; Vice-president, Harry E. Smith; Recording Secretary, Marion Peterson; Treasurer, Eli Shuska. The local, as an organization, put $200 into Liberty bonds of the Fourth issue, but the individual members invested approximately $8,000. They also bought about $2,000 worth of War Savings and Thrift Stamps. The local donated $50 to the Red Cross and the individual members about $300.

LOCAL UNION 1430, CONNORVILLE, O.
This local was organized August 23, 1900, with Joseph Lemon president and Charles Fletcher secretary. There are 125 men in the local, employed at the Connor mine of the Wheeling & Lake Erie Coal Co. At one time the local had a membership of 400, but the mine is no longer the producer it was. Present officers of the local are:

President, P. O. Jennings; Vice-president, Eugene Dolf; Recording Secretary, L. A. Jennings; Financial Secretary, Steve Kovac; Treasurer, Sam Vince; Mine Committee, Nick Dianopi, Joe Mafo and Joe Vince. There are 16 Italians, 4 Hungarians, 4 Russians and 6 Tunes represented in the membership. Seven members of the local served in the war, one of whom, Pete Dolfi, was wounded by a shell in the Argonne Forest. All of the men have returned home. They are: Charles Miro, Clifford Fellers, Peter Dobrowalski, Pete Dolfi, Ralph Vince, Ernest Sider and Andrew Laposki.

This local, in fact, the entire town of Connorville, was missed during the first two Liberty Loan drives. When the Third Loan opened the miners asked permission to purchase bonds through the mine office. This was granted and as a result the men subscribed to the amount of $12,456 in the Third Loan, $6,000 in the Fourth and $4,000
in the Fifth. They put $4,000 into War Savings and Thrift Stamps and donated nearly $1,000 to the Red Cross and other war work funds.

LOCAL UNION 1744, BAILEYS MILLS, O.

The 29 members of this local are employed at the Murphy mine of the Conshohocken Coal Co. Although the mine was closed down during a great portion of the war, the members bought Liberty Loan bonds to the amount of $7,000 and held a big flag-raising and picnic for the benefit of the Red Cross. Sixteen members of the local served in the Army during the war. One of these was wounded.

LOCAL UNION 1833, MAYNARD, O.

Men of this local are employed at the Jug Run mine of the Fosy Smoother Co. Co. Officers of the local are: President, Frank Kuhn; Secretary, Frank Kupsock; Treasurer, George Boud. Sixteen members of the local were in the war, one of whom, Sergeant John Shumle, was wounded. The local, as a body, did not purchase any Liberty Loan bonds, but the members put $2,100 into the Second Loan, $7,700 into the Third and $2,500 into the Fourth, in addition to purchasing $1,200 worth of War Savings and Thrift Stamps. They also gave $500 to the Red Cross.

LOCAL UNION 1962, RUSH RUN, O.

This union has been in existence since 1904. Its 14 members work at the No. 4 mine of the Glen Run Coal Co., of Cleveland. Officers of the local are: President, James Wiley; Malt Gfiting, Joseph Bole, Ray Lindsey, Bernard Kell, Claude Long, John Wilson, Joseph Morgan, Frank Parker, Harry Baden, Lyle Beveridge, James Pleasing, Wm. Rosen, Martin Miller, Ira Chambers, John Aiken, Robert Beam, Albert Eastbrook, Chester E. Smith, Geo. Doey, Joseph Polk, Frank Polk, Geo. Reardon, Geo. Reardon, Mike Frontino, William Delano, Charles Kardos.

LOCAL UNION 1979, HOPEDELL, O.

This is one of the newer and smaller locals of the subdistrict. It has a membership of about 16 and was organized November 14, 1917. There are 12 Americans and 4 Italians in the membership. The men are employed at the Ella No. 1 and 2 mines of the States-Williams Co., of Cadiz, O. Officers of the local are: President, Charles Law; Vice-president, William Surch; Secretary, B. E. Breed. But one member, E. E. Rabe, served in the war. The local was not in existence during the Liberty Loan campaign.

LOCAL UNION 2300, BRADLEY, O.

This is the largest union of the district, with 25 members, of whom 20 are in the mines, and the other 5 are employed in the offices. The local is located in the Cleveland, Ohio, district. The officers are: President, Geo. Palen; Recording Secretary, Andy Wagnon; Financial Secretary, Mike Buhdahom. Liberty bonds were bought by members as follows: First Loan, $300; Second, $800; Third, $1,400; Fourth, $725; Fifth, $500. The local purchased from the treasury $200.60 worth of Thrift and War Savings Bonds and Individual members put $1,300 into these securities. The local also bought $2,500 into the Red Cross, and the local donated $200. The following members were in the war: Frank Hahn, Angelo Talko, Ernest Dymon, Charles Dohm, Roy Sibum, Ray Mahaffey, Andy Testa, Ben Lenzey, Edna Wood, Charles Thompson and Tony Ehrlich.

LOCAL UNION 2132, LAFFERTY, O.

This is one of the newer locals of the district, with 30 members. It was organized in 1918 and is located in the Lafferty, O., district. The officers are: President, Alex Bole; Recording Secretary, Julius Strovers; Financial Secretary, John Darcy. Seven members of the local were in the war, all returning unharmed. There are 12 Poles and 20 Italians in the membership. The local did not purchase any Liberty bonds or War Savings Stamps, but the union donated $1,100 worth of the Third Loan bonds and $6,000 of the Fourth addition to $2,500 worth of Stamps. They also gave $150 to the Red Cross and $75 to the War Chest.

LOCAL UNION 2138, FLUSHING, O.

The 30 members of this local work on the Rosemary mine, west of Flushing, on the B. & O. railroad. Officers of the local are: President, Alex Bole; Recording Secretary, Julius Strovers; Financial Secretary, John Darcy. Seven members of the local were in the war, all returning unharmed. There are 12 Poles and 20 Italians in the membership. The local did not purchase any Liberty bonds or War Savings Stamps, but the union donated $1,100 worth of the Third Loan bonds and $6,000 of the Fourth addition to $2,500 worth of Stamps. They also gave $150 to the Red Cross and $75 to the War Chest.

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Harry Yost; Recording Secretary, George Bacev; Financial Secretary, Edgar Bricke; Mike Committee, Harry Yost, Alex Coyle and Guy Brindley. There are 44 Hungarians and 20 Poles in the local. Eight men served in the war as follows: John La Crosse, George Purnell, Frank Brown, Newton May, John Daniels, Ross Fratto, Percy Yost and Carl Mose. The men bought Liberty bonds to the amount of $7,000 in the Second Loan, $8,000 in the Fourth and $1,000 in the Fifth. They also bought $2,000 worth of War Savings and Thrift Stamps and contributed approximately $500 to the Red Cross and other war works.

LOCAL UNION 1838, SHADYSIDE, O.

This union has been in existence since 1922. Its 207 members are employed at the Pultin mine of the Cambria Colliery Co., of Toledo, O. Nearly all of the 207 members are American citizens. Poles, Bohemians, Italians and Serbians are represented in the membership. Officers of the local are: President, George McGinn; Vice-president, Charles P. Gillis; Recording Secretary, O. R. Per- son; Financial Secretary, J. H. Schram; Treasurer, Will- iam Snyder. Members of this local hold over $100,000 worth of Liberty bonds and are not falling. First Loan, $200,000; Second Loan, $350,000; Third Loan, $90,000; Fourth Loan, $150,000; Fifth Loan, $10,000. The local, as an organization, invested $5,000 into the Victory Loan. The men also bought approximately $27,000 worth of War Savings Stamps and donated $1,200 to the Red Cross and $1,200 to other war works. The local, as a body, gave $1,000 to the Red Cross. Thirty-seven members served in the war, eleven of whom were wounded.

Second Loan, $10,000 of the Third and $14,000 of the Fourth. They also put $1,000 into Thrift and War Savings Stamps and donated $1,300 to the Red Cross.

LOCAL UNION 2150, BLAINE, O.

There are 270 men in this local. Officers are: President, Mike Lemburg; Recording Secretary, George Munjus; Financial Secretary, Mike Kern. Twenty-five members of the local were in the Army during the war, none of whom was killed or wounded. The local union invested $2,700 in Liberty Loan bonds and the members individually $36,000. The local donated $25 to the Red Cross and the members approximately $1,100.

LOCAL UNION 2150, MAYNARD, O.

This is one of the big locals of the sub-district, with a membership of 420. There are only about 90 citizens in the local of a mixed membership of Polish, Slavish and Austrian miners. Twenty-eight members of the local served during the war, 27 in the Army and 1 in the Navy. The members bought a total of approximately $55,000 worth of Liberty Loan bonds and $27,000 worth of War Savings Stamps. Donations totaling $800 were made to the Red Cross.

LOCAL UNION 2181, RAMSEY, O.

This local was established in 1863. At present it has a membership of 215 men, employed at the No. 3 and 4 mines of the Great Lakes Coal Co., of Columbus. Officers of the local are: President, Harry Baslak; Vice-president, John Brown; Recording Secretary, Pete Causety; Financial Secretary, James Tuckosh. There are 2 Slavv and 2 Poles in the membership. During the influenza epidemic there were 25 deaths in the local, a total of $1,500 being paid out in death benefits. Despite this the local donated $200 to the Red Cross and $270 to the Y. M. C. A. The members put $500 into the Second Liberty Loan, $8,000 into the Third, and $19,000 into the Fourth. Ten members served in the war, one of whom, Charles Borkowski, was wounded. His comrades were: Alex Tuckosh, Mike Stock, Dave Jesso, Wilhelm Dorn, Frank Padiko, James Cifaldo, William Jackson and Andrew Zarapka.

LOCAL UNION 2260, BAILEYS MILLS, O.

Although there are but 52 men in this local it made a splendid war work record. Under the direction of Otto Crum and E. O. Workman, who had charge of the Red Cross work, a picnic and flag raising exercise was ar-

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LOCAL UNION 2262, DILES BOTTOM, O.

This local was organized March 1, 1909. The 324 members were employed at the Big Run mine of the Salt & River Coal Co. The original officers of the local were Henry Brown, president; S. T. Day, vice-president; M. T. Barrett, treasurer. There were 25 charter members and at one time the membership went as high as 336. Present officers are: President, D. B. Brown; Recording Secretary, C. B. Creamer; Financial Secretary, R. W. Wallace; Mine Committee—W. B. Gallagher, George Spokis and Mike Rahibi. There are 60 Russians, 80 Austrians, 50 Poles and 24 Italians in the local. The members bought approximately $71,000 worth of Liberty Loan bonds and $5,000 worth of War Savings and Thrift Stamps.

Harold Brown and Frank Toth were the only members of the local serving in the war who were wounded. Others in the service were: Carl Toff, Charlie Schroder, Nick Toth, Frank Toff, Dano Yoki, John Waleck, Pete Rokos, John Reynolds, L. M. Bowyer, Frank Benedict, Harold Brown, Wm. Banister, Lawrence Baker, Gilbert Doty, Nick Grubich, Eli Gitch, Ernest Gentile, W. O. Houston, George Hopple, Steve Doty, Carl Otto, John Lukacs, Sam Minus, Sam McCue, C. B. Miller, Everett Malpiede, Louis Ban- dura, John Bakwicz, Homer Piper, John Piper.

LOCAL UNION 2276, KLEE, O.

The members of this local, 45 in number, are employed at the Bakevoll Coal Co. mine at Klee. The mine was idle for a long period during the war and as a result the men had little money to invest in securities. However, they purchased bonds to the amount of $4,500 and War Savings Stamps to the amount of $1,500. In addition to this they gave $50 to the Red Cross and $150 to the War Chest. Four members of the local enlisted during the war. Officers are: President, Tim Dawksin; Secretary, John Glasgow.

LOCAL UNION 4322, ELM GROVE, W. VA.

This is one of the newer locals of this section, being organized but little over a year ago. There are at present 92 members. The local treasury was low during the war and no Liberty Loan bonds were bought, although the members individually held a number of bonds. Two members, Clyde Ewing and Martin Harris, served in the war. Officers of the local are: President, Frank Reilly; Vice-president, Jacob Kozicki; Secretary, Harry Davis; Treasurer, Harry Marx; Trustee, Sam Moore. The first officers of the union were: President, C. W. Moore; Vice-president, Frank Yates; Secretary, William Kindlesberger; Mine Committee—Joseph Overby, Tony Tolley and Charles Burnsides.

During the war the members put $500 into the First Liberty Loan, $1,500 into the Second, $1,000 into the Third, $500 into the Fourth. They also bought $500 worth of War Savings Stamps and donated $900 to the Red Cross and $250 to other war works.

Twenty-four members served in the war, three of whom, William E. Hahne, Albert Steeves and Albert Waltz, were wounded. Herman Kindlesberger died of pneumonia while in the service.


LOCAL UNION 2386, GLENCOE, O.

The men of this local union, employed at the Detour mine of the Yougougheny & Ohio Coal Co., of Cleveland, were organized in 1902. There are at present 118 men in the local. The officers are: President, John Thornton; Vice-president, August Carlson; Secretary, Fred Carlson; Treasurer, John Krawagna. There are approximately 40 citizens in the local. Italy, Austria, Sweden, Hungary, Montenegro are represented in the membership.

The men of this union purchased Liberty Loan bonds at the rate of every issue, investing $1,200 in the First, $800 in the Second, $15,000 in the Third, $4,000 in the Fourth and $5,000 in the Fifth. They also bought $5,000 worth of War Savings Stamps. The local, as an organization, donated $300 to the Red Cross. Four members served in the war—Jack Creepe, Houston Higgins, Lloyd Rankin and Marion Lehm.

LOCAL UNION 2387, FAIRPOINT, O.

There are 283 men in this local, employed at the Columia mine, west of Fairpoint. Officers of the local are: President, George Miller; Recording Secretary, Robert Clanton; Financial Secretary, Albert Blakely. There are 150 Poles, 25 Italians, 50 Montenegrans in the membership. Only about 75 are citizens. The local, as an organization, holds $750 worth of Liberty Loan bonds. In all, the members have invested $17,800 in the Third Loan bond, $18,500 in the Fourth and $5,000 in the Fifth. They also purchased approximately $10,000 worth of War Savings Stamps and donated $800 to the Red Cross and $1,000 to the War Chest. Nineteen members of the local served in the war in various branches of the service, one of whom, Peter Cassolly, died in the service, and two of whom, Rosario Gattamaele and John Dayton, were wounded in action.

LOCAL UNION 2526, NEFF, O.

There are 252 members in this local, employed at the Dillon mines of the Wheeling & Lake Erie Coal Co., at Neffs. Albert Ratzenbach is president and John Holick, secretary of the local. Men of the No. 7 mine purchased $4,850 worth of Fourth Liberty Loan bonds and $2,250 of the Fifth issue. They also gave $250 to the Red Cross.

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$342.50 to the War Chest and $84 to the Armenian relief fund. Seventeen members served in the war.

The men of No. 8 mine put $5,000 into Fourth Liberty Loan bonds and $2,500 into War Savings Stamps. They gave $300 to the Red Cross and $375 to the Salvation Army. Eight members served in the war.

LOCAL UNION 2529, MAYNARD, O.

The 80 men of this local work at the Purshgay-Maher Co. mine, west of Maynard. Officers of the local are: President, Marien Bumgardner; Financial Secretary, Joes. Zepfack; Recording Secretary, Thomas Harris. Members purchased approximately $12,000 worth of Liberty Loan bonds and $2,000 worth of War Savings Stamps. They gave $100 to the Red Cross and $75 to the War Chest. Six members served in the war, none of whom was killed or wounded. Of the 80 members approximately one-fourth are citizens. Represented in the membership are 8 negroes, 60 Poles and 3 Hungarians.

LOCAL UNION 2591, FLUSHING, O.

This local has a membership of 130 men, employed at the Flushing mine of the Massillon-Belmont Coal Co. Officers of the local are: President, George Mauthce; Financial Secretary, Howard James; Recording Secretary, Robert E. Evans. Members purchased bonds as follows: Third Loan, $5,000; Fourth Loan, $4,000; Fifth Loan, $4,100. They also put $5,000 into War Savings Stamps, while the local, as an organization, invested $500 in these securities. Members also donated $600 to the Red Cross and $100 to the War Chest. Nine men served in the war, all of whom returned safely. There are approximately 77 citizens in the membership, made up of Americans, Italians and negroes.

LOCAL UNION 2593, LAFFERTY, O.

This local has a membership of 125, employed at a mine south of Lafferty on a two-mile switch of the B. & O. railroad. Andy Lentz is president, John Shutway recording secretary and Steve Kahidi financial secretary of the local.

LOCAL UNION 3321, BARTON, O.

There are 44 men in this local. Officers are: President, Sheridan Shick; Recording Secretary, Louis Kiler; Financial Secretary, George Repshak. The local union invested $4,000 in War Savings Stamps and the individual members $1,350. The members also bought $1,175 worth of Liberty Loan bonds and donated $150 to the Red Cross.

LOCAL UNION 3362, WELLSBURG, W. VA.

The 130 members of this local work at the Labelle No. 4 mine of the West Virginia-Pittsburgh Coal Co., of Cleveland. The local was organized July 5, 1917. Present officers are: President, Charles Looman; Vice-president, Charles Looman; Recording Secretary, Peter Lewis; Financial Secretary, Paul Osback; Treasurer, Louis Favali. There are approximately 60 citizens in the local. There are 1 Peole, 18 Hungarians, 90 Italians, 2 Greeks and 1 Belgian in the membership. Members bought bonds of the third issue, $10,000; Fourth, $8,500, and Fifth, $2,500. They also invested $2,000 in War Savings Stamps, gave $500 to the Red Cross and $250 to the Salvation Army. The local put $500 into bonds of the third issue.

$400 into the Fourth and donated $75 to the Red Cross and other war works. Twenty-two members served in the war, none of whom was killed or wounded. Their names follow: Wm. Snyder, E. Davis, R. Davis, Roger McKinnis, W. Kocaceh, Paul Bickers stuff, James West, Carl Myel, Charles Looman, John G. Jones, Frank March, Paul Lucie, Frank Caworth, Lester Petry, Ralph Long, Chas. Williams, Grover Woods, Charles Moran, William Donnelly, William Dittmar, John Rusin.

LOCAL UNION 3394, BRILLIANT, O.

The men of this local, 75 in number, are employed at the Bunny mine of the Lake City Coal Co., of Cleveland, located at Brilliant. Officers of the local are: President, A. J. Cook; Vice-president, Charles Taylor; Secretary, Harry Deneen. Six members of the local served in the war.

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Army during the war, one of whom, M. A. Shawhan, was
slightly wounded. Members of the local invested $2,550
in bonds of the First Liberty Loan and donated nearly
$100 to the Red Cross.

LOCAL UNION 3438, CRESCENT, O.

There are less than half a hundred men in this local
union, yet they bought Liberty Loan bonds to the amount
of $9,000 and War Savings Stamps to the amount of
$2,760. In addition to donating $500 to the Red Cross and
$450 to the War Chest fund. Six members served in the Army
during the war. Officers of the local are: President,
Charles Henderson; Secretary, Joe Hoydens.

LOCAL UNION 3522, BAILEYS MILLS, O.

There are only 20 men in this local, employed at a small
pick mine, the Sunshine mine, of the Millwood Coal Co.
at Baileys Mills. The local did not purchase any Liberty
Loan bonds, but invested $200 in War Savings Stamps.
But two men served in the war. Anthony Jeffers is presi-
dent of the local.

LOCAL UNION 3537, MOUNDSVILLE, W. VA.

There are 175 men in this local, 100 of whom are Ameri-
can citizens. There are Russians, Lithuanians and Aus-
trians in the membership. The men are employed at the
Panama mine of the Ben Franklin Coal Co., of Pittsburgh,
located at Moundsville. The local was organized in 1917.
During the war four members served in the Army, all of
whom returned. The members purchased Liberty Loan
bonds to the amount of $5,000, $200 worth of War Sav-
ings Stamps and donated $450 to the Red Cross and ap-
proximately $100 to other war relief works. The local
bought a $100 bond and gave $50 to the Red Cross.

LOCAL UNION 3562, NEFF, O.

This local has a membership of 48 men, employed at the
Willow Grove Mine No. 2 of the Parsglove-Maher Coal
Co., north of Neff, O. This mine was idle during the war,
so the members were unable to purchase War Savings
Stamps or Liberty Loan bonds. Joe Krokey is president of
the local.

LOCAL UNION 3541, HARRISVILLE, O.

The 46 members of this local are employed at the
Walker mine of the H. Walker Coal Co., of Dillovale, O.
The mine is located near Harrisville. The local was or-
ganized in 1917. There are Hungarians, Poles and Italians
in the membership. Approximately 31 of the members are
citizens. Officers of the local are: President, Orville Mc-
Manus; Vice-president, Albert Zurik; Recording Secre-
tary, John Beveridge; Financial Secretary, Charles Purdy.
Members of this local purchased $2,550 worth of Liberty
Loan bonds of the Fourth loan and $150 worth of War
Savings Stamps. The local donated $50 to the Red Cross.

Four members served in the Army during the war—Leo
W. Farrell, Walter McGrew, William McKinley Norris and
Charles Kibble. Farrell was wounded in action.

LOCAL UNION 3738, STEWARTSVILLE, O.

This is one of the smaller locals of the sub-district, with
a membership of 23 men, employed at the Glencoe, O.
mine of the Valley Grove Coal Co. During the Red Cross
drive 22 members, present at a meeting of the local agreed
to give $5 to the Red Cross, all redeeming their
pledges. The members bought $1,500 worth of Liberty
Loan bonds of the Third issue and $2,400 worth of the
Fourth issue bonds. Nine members served in the war one
William Palmer, being wounded in action. Officers of

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LOCAL UNION 3765, WARWOOD, W. VA.

There are only 12 men in this local, employed at the
Costanza mine at Warwood. Officers of the local are:
President, John Fitzpatrick; Secretary S. K. William
The local was organized in 1917. Two members served
in the Army during the war—George Wilcox and Earl
Howard. Members bought bonds of every Liberty Loan
issue as follows: First, $5,000; Second, $1,500; Third,
$1,500; Fourth, $1,000; Fifth, $500. The mine is what
is known as a track mine, furnishing coal to the Wheeling
water works.

LOCAL UNION 3828, DUNCANWOOD, O.

This local, organized in 1917, has a membership of 18
men, employees of the Short Creek mine of the Short Creek
Coal Co., of Adena, O. Officers of the local are: President,
David Young; Vice-president, Nate Pounds; Recording
Secretary, John Haught; Financial Secretary,
Charles Keazer; Treasurer, Steve Novacski. Members
purchased $7,500 worth of Liberty Loan bonds of the
Fourth issue and $1,900 worth of War Savings Stamps, in
addition to donating $500 to the Red Cross and $100 to
other war relief works. But one member served during
the war in the Army. The local recently built a hall at
an outlay of $6,000, which will be dedicated this fall.

LOCAL UNION 3933, LAMIRA, O.

There are 72 men in this local, employed at the
Leonia mine of the National Coal Co., near Belmont. Only
one man from this local served in the war. Members of
the local invested $6,600 in bonds of the Fourth Liberty
Loan issue and $100 in War Savings Stamps. Owing to
the uncertain operation of the mine the members did not
donate any money to the Red Cross.

LOCAL UNION 4140, DUNCANWOOD, O.

This local was organized in 1918. Its 112 members are
employed in the Goodrich Rubber Co. mine at Duncan
wood. There are 16 Poles and 16 Hungarians in the local's
membership, the others being Americans. Officers of the
local are: President, Chris Stein; Secretary, Jess Stein;
Financial Secretary, Ross Lewis. The members invested
$6,000 in the Fourth Liberty Loan and $8,000 in the Vic
ory Loan bonds in addition to putting $1,300 into War
Savings Stamps and donating $300 to the Red Cross and
$175 to other war relief works. Seven members served in
the Army during the war, one of whom, Percy Parmer,
was wounded. Every member of the local has a warm
spot for Greiner Chamberlain, now pumper at the mine,
who was boss before the mine was sold by the Sommers'
Coal Co. They believe he was the best boss in the district.

Members serving in the war were: Ross Persive, Luther
Clark, Charles Dunfee, Percy Parmer, Jess Stevens, Roht
Stevens and Robert Griffin.

The local has started erection of a hall at Duncanwood,
which will cost approximately $6,000. The mine main
ains a benefit fund from which $175 is paid the heirs of
every member who dies.

LOCAL UNION 4285, TRIADELPHIA, W. VA.

The 125 members of this local are employed in the No. 3
mine of the Elm Grove Coal Co. at Triadelphia. Officers
of the local are: President, Cooper Dew; Recording Sec
etary, William Kent; Financial Secretary, G. H. Brant;
Mine Committee—Henry Watson and Sam Kent. About
a third of the men are citizens. The mine where these
men work has been sunk to the level of the coal. The
local is but a year old, but it is believed when the mine
reaches its full operation the membership will reach 500.

LOCAL UNION 4300, EGGDRWOOD, W. VA.

This local has a membership of but 33 men, employed at the
Edginton Lane mine of the Edginton Coal Co.
The local was organized in October, 1918. The officers are:
President, Harry Ackerman; Vice-president, Tom
Orum; Recording Secretary, Walter Meyer; Financial
Secretary, Lewis Luban; Mine Committee—Len Orum,
James Orum and Willard Birch. The members invested
$1,900 in each of the first four Liberty Loan bonds and
$300 in the Fifth. They also donated $150 to the Red
Cross and $200 to other war relief works. The local had
a membership of but 12 at the time it was organized.

LOCAL UNION 4325, SHORT CREEK, O.

This local was organized on November 7, 1918. The
men are employed at the Georgetown mine of the Short

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Creek Coal Co., of Adena. There are 33 men in the local, 33 of whom are citizens. Men of Polish, and English birth are represented in the membership. Officers of the local are: President, William Woodcock; Recording Secretary, Tony Dzikto; Financial Secretary, H. O. Brown. The members invested $1,750 in bonds of the Fourth Liberty Loan and $200 in War Savings Stamps. In addition to donating $100 to Red Cross and other war relief work. Four members, William Nordevech, Robert Stevens, Joe Patterson and Forest Redman, served in the Army during the war.

LOCAL UNION 4350, FAIRPOINT, O.

This local was but recently organized and has a membership of less than 40 men. They are employed at the Grabapple mine west of Fairpoint, on the B. & O. railroad. Officers of the local are: President, Mike Sekubai; Financial Secretary, Julius Urr; Recording Secretary, Row Bowles. The members bought bonds of the Fourth Liberty Loan issue to the amount of $1,600. But one member served in the war.

LOCAL UNION 4407, FAIRPOINT, O.

This is another of the smaller locals of the sub-district, also one of the newest, as the charter was not received until February 7, 1919. As the local was not in existence during the war no war work was done except individually by the men. Officers of the local are: President, Andy Hobart; Financial Secretary, Ben Shively; Recording Secretary, George Trojanich. The men are employed at the new Troll mine east of Fairpoint.

LOCAL UNION 4410, UNIONTOWN, O.

This local has a membership of 58 men, employed at the Lee mine of the Uniontown Coal Co., Youngstown, O. At the time the local was organized, February 1, 1919, there were 58 charter members. Officers of the local are: President, Tony Maronia; Vice-president, A. H. Seevers; Recording Secretary, Harry Devill; Financial Secretary, Lee Day. Prior to organization into this local the members invested $2,000 in First Liberty Loan bonds, $1,600 in Second, $1,200 in Third and $1,000 in Fourth. They also hold $1,000 worth of War Savings Stamps and donated $300 to the Red Cross. But three members served in the war.

LOCAL UNION 4563, ROBBIN, O.

Although this local is but little over a year old, being organized May 19, 1919, it has a membership of 54 men, employed at the Bud mine of the Y. & O. Coal Co. at Robbin, O. There are Italians, Poles, Hungarians represented in the membership. Officers of the local are: President, Ed. Mcgonigal; Vice-president, John Timco; Secretary, Robert Lynn; Mine Committee—Yergal Burkini and Joe Zoboski. The members purchased $5,000 worth of bonds of the Victory Loan issue and the local union, as a body, invested $1,000.

LOCAL UNION 1833, MAYNARD, O.

There are 169 men in this local union, of whom approximately half a hundred are citizens. There are Hungarians, Roumanians and Greeks represented in the membership. George Bethel, financial secretary of this local, has been working in the mines in this section since 1885 and was a member of the old Progressive union.

LOCAL UNION 3448, LAFFERTY, O.

The 89 members of this local are employed at the Oco mine, east of Lafferty. Officers of the local are: President, Dominick Venturato; Financial Secretary, Louis Venturato; Recording Secretary, Leo Deromato. The

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members invested approximately $2,650 in Liberty Loan bonds during the war. Seven members served in the war, all of whom returned.

LOCAL UNION 4326, MAYNARD, O.

This is one of the smaller locals of the sub-district, having a membership of but 15 men. They work at the Berry mine of the Stark & Ohio Mining Co., of Cadiz. The mine was organized October 25, 1918. Frank Johnson is secretary and has been since the local was organized.

The men at this mine are working under difficulties, as they are working through an old mine which has been abandoned for 30 years, trying to get through to a block of coal lying back of it.

LOCAL UNION 292, CRESCENT, O.

The men of this local, 171 in number, are employed at the Crescent mine of the Lorain Coal & Dock Co., of Columbus, O. It is one of the old established locals, being organized in 1899. Edward Novack is president, Alex Major recording secretary and Joe Kovac financial secretary of the local. There are approximately 41 citizens in the local. Seventy-two Hungarians and 58 Poles make up the balance of the membership. Fifteen members served in the Army during the war, two of whom were killed and two wounded. Members of the local invested $500 in First Liberty Loan bonds, $400 in bonds of the Second Issue, $100 in the Third, $2,850 in the Fourth and $2,000 in the Fifth in addition to buying $5,000 worth of Thrift Stamps and donating over $1,000 to the Red Cross and other war works. The local, as an organization, invested $225 in War Savings Stamps.

The war victims of the local were F. F. Dunley, who died at Camp Sherman, and James Burk, who was killed in action. Edward Hopkins and Charles Burk were both wounded.

LOCAL UNION 3652, BELLAIRE, O.

There are 70 men in this local, employed at the Carnegie mine at Bellaire. In the Third Liberty Loan drive every member bought a $100 bond, and each man donated a day and half pay to the War Chest. Five members, as follows, served in the war, all of whom returned safely: Okey Price, Frank Parageese, David Marine, Fred Suarez, William Oliver. Officers of the local are: President, James Burda; Recording Secretary, Calvin Warren; Financial Secretary, Gilbert Marling; Treasurer, John Eggiman.

LOCAL UNION 2399, HARPERSVILLE, O.

This local has a membership of 205. The men are employed at the Piney Fork No. 3 mine, of the Jefferson Coal Co., of Cleveland. Officers of the local are: President, James Forbes; Vice president, Morgan Evans; Recording Secretary, Eddie Sable; Financial Secretary, Joseph Yun. The local invested $1,500 in bonds of the Second Liberty Loan and individual members bought bonds of all five Issues.

LOCAL UNION 3434, TILTONVILLE, O.

This is one of the smaller locals of the sub-district, with a membership of but 20 men. Officers of the local are: President, Robert Welsh; Secretary, J. B. Armitage. Fifteen of the 20 men in this local are citizens. They are employed at the Wagoner mine of the Highland City Coal Co. The local was organized in 1919, being one of the newer locals in the field. Two members, Raymond McAndrew and Robert Payne, served during the war in the Army.

LOCAL UNION 1216, BRILLIANT, O.

This local was established in 1906 when the Goode mine of the Consolidated Fuel & Supply Co. was organized.

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ized. It has a membership of 100 men, 65 of whom are citizens, the others being Slavs, Poles, Hungarians and Italians. Officers of the local are: President, George Craig; Recording Secretary, David Jarvin; Financial Secretary, J. H. Chadwell. Six members served in the Army, as follows: William Lambertson, James Chalfant, Leo Barcus, Clarence Pommering, George Lee and Franel Porter. Liberty Loan bonds to the amount of $25,000 were purchased by the members, who also invested $8,000 in War Savings and Thrift Stamps and donated $1,200 to the Red Cross and other war works.

LOCAL UNION 777, RUBYVILLE, O.

The 60 members of this local work at the Manice mine of the Starcoal Mining Co., of Adena, O. The local was organized in 1916 and at present has the following officers: President, S. C. Mau; Vice-president, Walter Scieszka; Secretary, Clifford Boyd; Treasurer, Mike Lahilles. But two members served in the Army during the war. All members purchased Liberty Loan bonds and in addition to this donated to the Red Cross and other war relief work. The local donated $475.00 to the Red Cross.

LOCAL UNION 5691, WASHINGTON PIKE, W. VA.

This little local has a membership of 12 men, employed at the Washington Pike mine near Wellsburg, W. Va. Officers of the local are: President, Richard Stanley; Secretary, Ray Reed. The local was organized in 1917. All members are citizens. Two members were in the Army during the war.

LOCAL UNION 4438, FOLLANSBEE, W. VA.

The 60 men of this local, organized February 28, 1919, are employed at the Arnold mine of the Home Coal Co., at Follansbee. Officers of the local are: President, James Luke; Recording Secretary, Raymond Lonz; Financial Secretary, John F. Brady. During the Fourth and Fifth Liberty Loan campaigns the members bought $10,000 worth of bonds and also donated $250 to the Red Cross. But one member served in the Army during the war.

LOCAL UNION 1302, ST. CLAIRSVILLE, O.

This local was organized in 1904. Its 205 members are employed at the Clarkson Coal Mining Co. mine at St. Clairsville. Officers of the local are: President, H. E. Robinson; Vice-president, Tony Stutt; Recording Secretary, Alex Bucheck; Financial Secretary, Pete Ostoich. Twenty-four members of this local served in the war, five of whom were wounded and one of whom, Agnes Kovach-ich, was killed in action. The members purchased bonds of every Liberty Loan issue, investing a total of $88,150 in these securities. They also invested $5,000 in War Savings Stamps and donated $1,413 to the Red Cross and other war relief funds.

LOCAL UNION 3917, BLAINE, O.

There are 186 men in this local, employed in the Stanley mine of the Lorain Coal & Dock Co. Officers of the local are: President, Harry Christian; Vice-president, Joseph Grundy; Recording Secretary, Joseph Lavitchka; Financial Secretary, Fred Miller; Treasurer, Mike Turek. The local was organized in 1918.

LOCAL UNION 4077, ARMSTRONG'S MILLS, O.

There are but 30 men in this local, employed at the Captina mine of the Crow Oil, Gas & Coal Co., of Wheeling, W. Va. The local was organized July 10, 1918. Officers are: President, Frank Gast; Vice-president, Charles Sindeldecker; Secretary, Ross Landers. Three members, Archie Willison, Arthur Thomas and Samuel Thomas, served in the Army during the war. The members bought Liberty Loan bonds to the amount of $2,350.

LOCAL UNION 2979, DILLOUNALE, O.

The 180 members of this local are employed at the Dillan No. 2 mine of the Wheeling & Lake Erie Coal Co.

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Officers of the local are: President, Z. Zalaski; Vice-president, Frank Hurkel; Recording Secretary, Victor Leecq; Financial Secretary, George Goto. Eleven members of the local served in the Army during the war, none of whom was killed or wounded. Members bought $1,465 worth of Liberty Loan bonds and the local union, as an organization, $200 worth. The members donated $500 to the Red Cross.

Other local unions in the sub-district, concerning which detailed information is not available, follow:

Local Union 13; 345 men; George E. Scheid, Bridgeport, O., secretary.
Local Union 1077; 380 men; Ettor Del Guzzini, 1731 Guernsey St., Bellaire, O., secretary.
Local Union 1256; 140 men; William Harris, Jacksonburg, O., secretary.
Local Union 1271; 28 men; George W. Cooper, 547 N. Fifth St., Martins Ferry, O., secretary.
Local Union 1273; 86 men; William Thomas, 1019 Broadway St., Martins Ferry, O., secretary.
Local Union 1299; 70 men; John Reynolds, 1609 Lind St., Wheeling, W. Va., secretary.
Local Union 1664; Leo Wisewski, 1405 Thompson Ave., Moendumville, W. Va., secretary.
Local Union 1723; 40 men; Virgil McCloud, Adena, O., secretary.
Local Union 1762; 220 men; Ralph T. Holloway, Box 48, Holloway, O., secretary.
Local Union 1834; 30 men; Alex Chesman, 98 45th St., Wheeling, W. Va., secretary.
Local Union 1840; 538 men; Joseph Kaluka, Shadyside, O., secretary.
Local Union 1987; 120 men; Herschel Bademelli, Adena, O., secretary.
Local Union 2058; 82 men; Joe Kehl, Rayland, O., see'y.
Local Union 2112; 52 men; Theodore Dzikowski, Box 62, Dillenvale, O., secretary.
Local Union 2180; 178 men; Joseph M. Donahoe, see'y.
Local Union 2183; 161 men; John Kiser, Piney Fork, O., secretary.
Local Union 2400; 88 men; W. B. Fithen, Rush Run, O., secretary.
Local Union 2397; 259 men; Tony Falconi, Box 216, Fairmont, O., secretary.
Local Union 2592; 25 men; Fred Singerman, Bridgeport, O., secretary.
Local Union 2638; 11 men; Joe Chentos, 1418 Ascension St., secretary.
Local Union 2735; 167 men; John Ragan, Rhodesdale, O., secretary.
Local Union 3229; 164 men; John R. Batten, Triadelphia, W. Va., secretary.
Local Union 3244; 240 men; Frank Harris, Triadelphia, W. Va., secretary.
Local Union 3349; 119 men; Peter O'Hara, 1110 Commerce St., Wellsburg, W. Va., secretary.
Local Union 3437; 380 men; John Hill, Colliers, W. Va., secretary.
Local Union 3470; 18 men; O. G. Covey, Bellaire, O., secretary.
Local Union 3482; 19 men; George Hoge, Tiltonsville, O., secretary.
Local Union 3483; 32 men; Joseph Jeffers, Bellaire, O., secretary.
Local Union 3537; 189 men; Clyde Beatty, 207 Cedar Ave., Moundsville, secretary.
Local Union 3738; 40 men; George Backerott, Piney Fork, O., secretary.
Local Union 4017; 181 men; Fred Miller, Box 90, Bridgeport, O., secretary.
Local Union 3953; 64 men; Leon Deromedie, Lafferty, O., secretary.
Local Union 4223; 46 men; Roy Casey, Adena, O., see'y.
Local Union 4226; 20 men; Frank Johnson, Maynard, O., secretary.
Local Union 4470; 17 men; Harry Robinson, Bellaire, O., secretary.
Local Union 4472; 94 men; Delbert Sterling, Rayland, O., secretary.
Local Union 4586; 36 men; Perry Brindley, Rayland, O., secretary.
Local Union 4587; 30 men; Paul Goyakovich, St. Clairsville, O., secretary.
Local Union 3877; 20 men; Earl T. Taylor, 317 Warwood Ave., Warwood, W. Va., secretary.

GEORGE D. ROWLAND.

Mr. Rowland has been engaged in the coal industry for the past 22 years. He is president and general manager of the Coal Ridge Mining Co.; vice-president and general manager of the Apex Coal Co.; vice-president and secretary of the Lake Erie Coal Co., all of Cleveland, and general manager of the Hahner Coal Co., of Pennsylvania.

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The Composition of Coal

(from the coal catalog)

Coal analyses are of two kinds—ultimate and proximate. The first mentioned is a strictly chemical process wherein the percentages of the various elements in coal are determined. It is principally of scientific value and of so little interest to the users of coal that it will not be discussed here.

The proximate analysis of coals is of more importance. With the exception of the determination of sulphur, it does not involve chemical processes. Moisture is determined by heating a 1-gram sample in an oven at a temperature of 105 deg. C. for one hour and recording the loss sustained as the percentage of moisture. Volatile matter is found by heating a 1-gram sample in a closed platinum crucible for 7 minutes in the hottest flame of a Meker or Bunsen gas burner and recording the loss as volatile matter. Ash is arrived at by completely burning and weighing the incombustible portion which remains. Fixed carbon is the difference between the moisture plus volatile matter plus ash, and 100. The heat units are determined by burning in an atmosphere of oxygen a 1-gram sample in a calorimeter. Sulphur alone is determined by a chemical method.

MOISTURE.

Water in coal may be classed under two heads, first, mechanically retained, or surface, moisture, such as is present in coal loaded from wet sections of the mine, washed coal, or coal rained on; second, hygroscopic moisture, or that which is held within the pores of the coal by capillary attraction, and retained by the coal when air dried. Moisture in the first form, may or may not, be present in coal in varying quantities; in the second form it is unescapable, and it is in this form reported as moisture in coal analysis.

Hygroscopic moisture is present in all coals, ranging from 1 to 5 percent in coals of the Appalachian region up to 40 percent as found in the lignites of Texas and South Dakota. Almost every percentage between these extremes is found in considering coals throughout the United States, thus some of the Ohio coals reach as high as 7.6 percent; Indiana and Illinois, 15 percent; Iowa and Missouri, 20 percent; Colorado, 25 percent. These figures represent the extreme met with and are not to be regarded as typical of the coals produced in the various states, but rather as indicative of the variations in moisture contents.

The amount of surface moisture in coal varies with the kind and size, the length of time in transit, accessibility of air at, also upon relative humidity of the atmosphere. Slack coal, because of it having in the aggregate a large amount of exposed surface, absorbs relatively large quantities of moisture (as much as 15 percent in some instances), but it readily parts with much of this under favorable atmospheric influences. Lump coal, on the other hand, does not retain a great deal of surface moist-

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ure. Run-of-mine coal is intermediate between slack and lump coal, the quantity of water taken up being dependent upon the proportion of fine coal. The loss of moisture in shipment from the time it leaves the mine until the destination is reached may vary from practically nothing in the Appalachian coals, to from nothing to 5 percent in Illinois coal, and up to 10 percent in sub-bituminous and lignitic coal.

Moisture is a waste product and has no heat value. In fact it is anticaloric and requires a part of the heat liberated by the coal to vaporize it. One percent of water represents 20 pounds in a ton of coal and absorbs 22,580 British thermal units of heat, thereby lowering the efficiency of the coal by an equivalent amount.

Everything being equal, the coal containing the least percentage of moisture has the highest heat value.

**VOLATILE MATTER.**

Volatile matter in coal comprises mainly the combustible gases, hydrogen, carbon monoxide, methane and other hydro-carbons, together with some inner gas and water formed by the decomposition of the coal, but does not include the moisture expelled in heating the coal for an hour at a temperature of 105 degrees Centigrade.

The exact nature and composition of the gases comprising volatile matter is not yet understood, but for commercial purposes it is sufficient to know that it is that part of the coal which is driven off in the form of gas when the coal is subjected to heat. This gas, in a sufficient supply of air, burns readily and produces heat in fat, pound for pound it produces more heat than any other constituent part of the coal. It cannot be argued, however, that coal's highest volatile matter are the greatest heat producers, for differences in composition of the gas may cause wide differences in the heat produced by various coals. Only a fraction, and a variable fraction at that, depending largely on the kind of coal, this combustible, and a considerable fraction, consisting of water vapor, carbon dioxide, nitrogen and other constituents is inert or incombustible. Moreover, the rapidity in which the volatile matter is thrown off in burning, and the efficiency of air to insure complete combustion, have much to do with the heat value of coal. High volatile coals, when thrown in large quantities in the fire produce smoke. That is, the gases have been expelled at a faster rate than they can unite with oxygen of the air, leaving the unburned carbon to issue from the stack as black smoke. In all such cases much of the heat energy of the volatile matter is lost.

A characteristic of low volatile coal is that the gases issue forth at a slower rate, affording more opportunities for chemically uniting with oxygen, and a more complete combustion with less smoke. The practical heat value of these coals is, therefore, more nearly attainable in practice than with those with high volatile contents, unless mechanical devices, as stokers, are used.

**FIXED CARBON.**

This is the term conveniently and somewhat loosely applied to what remains after the moisture, volatile matter and ash are accounted for. It does not represent all the carbon in the coal, as a considerable amount, combined with hydrogen, is driven out in the volatile matter; furthermore, the term (fixed carbon) includes some of the hydrogen, sulphur, oxygen and nitrogen of the coal.

Fixed carbon has a high value as a heat producer, one pound generating about 14,544 heat units. While this is not in comparison with the heat produced by one pound of hydrogen carbon gas, namely, 23,500 heat units, it is nevertheless true in practice that with high volatile coals more protective heat is produced by the fixed carbon than by the volatile matter. The reason for this lies in the tremendous losses of heat energy in high volatile coal, due to the incomplete burning of the gases. According to data obtained by Lord and Sommermeyer on seventy-eight tests conducted by the U. S. Geological Survey at St. Louis during the World's Fair, the inability to derive full
heat value from volatile gases holds true on all coal having 20 percent or over of volatile matter; with coals having less than 20 percent, practically all of the bases can be completely burned. In general, coals generally ranging from 77 to 81 percent, in fixed carbon appear to offer the best opportunities for deriving the full heat of both the fixed carbon and the volatile matter.

ASH.

Ash is the solid incombustible mineral impurity remaining after the coal is burned. All coals contain in varying amounts, and present in due forms, first, mineral matter derived from the original vegetation, plus that which filtered through the vegetation as sifted after deposition and became intimately mixed with the other constituents. This is known as intrinsic ash. Second, ash or fire clay derived from the rock above the coal, soft bottom, or from parting within the seam. This is known as extraneous ash. Impurities in this latter form can be minimized by care in mining, casting out the refuse at the working faces, or by the use of picking devices at the tipple or breaker. Bony coal, or bone, is found as a part of many seams. This is a mixture of carbonaceous and argillaceous materials, and, unless cured, adds considerably to the ash content of the shipment.

Ash is objectionable because it has no fuel value. Each percent of ash representing 20 pounds per ton, is so much useless matter upon which freight, unloading, and cOKage charges must be paid. More labor is required with high ash coal for the removal of ashes, and more coal must be shoveled into the furnace. A further undesirable feature is that ash, in itself, is capable of forming clinkers, in spite of the general impression that sulphur alone is responsible for this mischief. Chemical analyses show that ash consists principally of alumina, Al₂O₃, lime, CaO, silica, SiO₂, iron oxide, FeO, magnesia, MgO, and sulphur S. Under the influence of heat, the basis oxides of the ash unite with the silica to form a silicate having a fusion point much lower than the fusion point of the separate constituents entering into the combination. The fusibility of this ultimate product depends largely on the ratio of the silica to the basis oxides found in the slag and also on the properties of the bases themselves.

SULPHUR.

Sulphur is always present in coal, varying in amount from 0.1 up to 8 percent. Unlike ash and moisture, it has some use as a fuel value, equal to about one-half that of the coal it displaces. It may exist in three forms, as a sulphur in combination with iron to form pyrites and marcasite, in combination with calcium to form calcium sulphide or gypsum and in more or less unknown states of combination with organic matter. The largest quantity of inorganic sulphur compound is undoubtedly in the form of iron pyrites, FeS₂, and as such is found in thin layers along the bedding planes, as minute crystals interspersed throughout the mass, and as irregular nodules scattered through the coal. When abundant in this latter form, it is sometimes used as a source of sulphur for the manufacture of sulphuric acid.

Organic sulphur in coal is derived from the protein sulphur of plant and animal life from which coal was formed. Investigations of late date indicate that the organic sulphur compounds form a large part of the sulphur in coal, some Ohio coals showing as much as 2 percent. There is a possibility of sulphur existing in coal in an uncombined form as a result of the mechanical mixing of detritus with the early coal material, but sulphur in a free form is undoubtedly a small proportion of the total amount.

Sulphur combined with iron is objectionable, because the compound is easily disassociated by heat, the sulphur passing off as gas, and the iron oxidizing to a ferrous state in which it readily combines with the other bases to form clinkers.

PHOSPHORUS.

Phosphorus exists in a coal in the form of calcium phosphate. Its amount is so small that it need not be considered in any usage than coking where the coke is to be used for metallurgical purposes. All of the phosphorus passes into the coke, and the high limit in the coal is therefore placed at 0.02 percent. It is objectionable in iron metallurgy for the reason that it makes the steel "cold short," that is it becomes weak and brittle when cold and liable to break under the shock.

HEAT VALUES OF COALS.

The heat value of a coal is usually expressed in calories or in British thermal units. Expressed in calories, it is the number of grams of water raised one degree Centigrade (from 15 degrees to 16 degrees Centigrade) by the heat resulting from the heat combustion of one gram of coal. Expressed in British thermal units, or as usually abbreviated, B. t. u.'s. It is the amount of heat required to raise one pound of water (at 15 degrees C. or 62 degrees F.) through one degree. Calories may be converted into British thermal units, or vice versa.

The heat derived in burning coal is brought about by the oxidation of its combustible elements, viz., carbon, hydrogen, and the oxidized forms of sulphur and iron.

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The quantity of heat generated by the complete combustion of these elements is as follows:

<table>
<thead>
<tr>
<th></th>
<th>Calories</th>
<th>B.t.u.'s</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 lb. carbon to carbon dioxide</td>
<td>8080</td>
<td>14544</td>
</tr>
<tr>
<td>1 lb. hydrogen to steam</td>
<td>94460</td>
<td>62938</td>
</tr>
<tr>
<td>1 lb. sulphur to sulphur dioxide</td>
<td>2250</td>
<td>4050</td>
</tr>
</tbody>
</table>

Based on a knowledge of the above heating values, many heating formulas have been devised to calculate the heating value of a coal directly from its ultimate analysis. The best known of these is Dulong's formula which is commonly stated as follows:

It is assumed in Dulong's formula that the various combustible components are completely oxidized. The results obtained, as might well be expected, vary somewhat with results obtained by the use of the calorimeter:

1. The heat value of carbon, hydrogen, and sulphur have not been definitely determined, thus the caloric value for carbon is sometimes stated as 8190 instead of 8080, and if the higher value is taken the calculated caloric value will be raised from 10 to 15 calories per sample. Sulphur is sometimes given a value of 2230, though the higher value is the generally accepted one.

2. The heating value of a component of a chemical compound is assumed to be the same as in its free state, an assumption which is manifestly incorrect. Thus, some organic compounds, as for instance, carbon bisulphide, have a decidedly higher caloric value than that derived by the combustion of equivalent amounts of the elements present. The same is true of the combustion of benzine, C. H.

3. There is a possibility that some of the oxygen is combined with carbon, and not all of it combined with hydrogen as is generally assumed. This seems to be particularly likely in the case of high volatile and high moisture coals. Since the caloric power of hydrogen is 4.265 times that of carbon, the assumption, if correct, results in lowering the calculated value. It is generally agreed that all of the oxygen in coal is in combination with one or more of the combustible elements; if it were in the free form it would enter into combination with carbon, hydrogen, and sulphur, just as the oxygen of the air does, and thus evolve heat. In Dulong's formula it is assumed that all of the oxygen is in combination with the hydrogen in the proportion to form water that is eight parts of oxygen to one of hydrogen. The oxygen thus renders useless one-eighth of its own weight of hydrogen and the hydrogen which is available for combustion will be H-1.8 O.

4. Since the amount of oxygen is derived by calculation, it follows that it bears the burdens of any errors made in the ultimate analysis, hence its percentage as stated may be inaccurate.

Somermeier states that the heat values obtained by the use of Dulong's formula are usually within less than 1/2 percent of the actual value as determined by the calorimeter.

---

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which fall in a wide application of the formula hence the use is not to be recommended.

To those familiar with the peculiarities of coal formation it is well known that, chemically, there may be only a considerable variation in the coal produced at ex- of two adjacent mines, but a variation in analyses from day to day even at the same mine. Thus, coals lying in a basin or inclined may analyze quite differently from those of the same seams lying along an anticline or in the outcrop. In some seams this variation is so great that it affects considerably the use to which the coal may be put, while in others the range is so slight that a general analysis fairly represents the entire seam. The above analysis of coal in the Connelsville Basin is quite like that from adjoining mines, and the same is true of two or more mines in the Georges Creek Basin, or of a group of mines in the same seam far from Clarksburg, W. Va., although, as illustrated that the seam itself is not of a composition, it will be noted that the coal at Clarksburg differs considerably from that at Connelsville, or at Frostburg, Md.

Wants to Know About Coal Prices.

Jack Bell, president of Local Union No. 971, Tiltonville, has evolved a plan to acquaint the public with one of the evils of the coal business. He wants the people to know that the coal miner is not to blame for the price which the consumer pays for his coal. His suggestion is that each miner shall write on a piece of paper the price he receives for mining the coal. Then he should roll up the paper, place it in the car, so that the consumer may find it when he buys the coal.

We, the miners, get 67 cents a ton for this coal. How much do you pay for it?

JACK BELL, Tiltonville, Ohio.

Bell does not complain about the price which the operator gets for the coal, but he believes there is no good reason for the high cost of coal when it is delivered to the ultimate consumer. He thinks there is too much profit margin between the price paid to the miner and the price paid by the consumer, and that the public ought to know the facts. Then the people will understand that the high cost of coal is not due to the wages of the coal miner.  

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(PUBLISHERS' NOTE:—R. R. Kitchen & Co. are the General Contractors who built the beautiful and substantial Miners' Temple, located on the corner of 34th and Belmont Streets, Bellaire, Ohio.)
Coal Versus Fuel Oil

(From The Coal Catalog)

The recent turning of industry in some of our Eastern cities from coal to fuel oil should not be surprising to those who are familiar with one of our most pronounced national proclivities. The readiness with which manufacturers have refitted their power plants for burning oil is but a repetition of the avidity with which industry years ago turned from coal to the use of natural gas. It but again portrays the American tendency to make subservient that which appears to be presently profitable, irrespective of what the future penalty may be. It is the confident belief of the writer that the misuse of fuel oil is fraught with great national danger and that the public will eventually be obliged to pay dearly for it; just as they are now beginning to pay for the ruthless depletion of our natural gas resources.

Three Commonly Used Fuels.

There are three commonly used fuels in American industrial and domestic use, namely, natural gas, oil and coal. Of the three named, natural gas is the most ideal for usage. In order to appreciate this fully it is necessary to understand that combustion is essentially a chemical reaction between the oxygen of the air and the hydrocarbons of the fuel. The readiness with which a fuel is ignited is measured by the volatile condition of its hydrocarbons. If the fuel be already in a gaseous state, the hydrocarbons are in the proper form for immediate union with oxygen. If the fuel be liquid, the oil will be supplied to the furnaces in the shape of finely divided particles which are forced into the furnace by a steam or air injector. In this finely atomized form there is a rapid transition from the liquid to the gaseous state, and hence no difficulty in securing combustion. If the fuel be a solid, such as coal, it is necessary that heat be first applied in order to distill off the hydrocarbons and thus bring them to a gaseous state. It will be apparent that Nature has done for natural gas what man must do for fuels in liquid or solid conditions.

Natural Gas.

But natural gas has other advantages as a fuel, such as transportation, flexibility in application, economy in first cost and labor, cleanliness, etc., and because of these, industry early foresaw its desirability as a fuel. By virtue of its abundance it was sold, for industrial use, for as low as 4 cents per thousand cubic feet, and Boards of Trade in such cities as Clarksville and Fairmont, W. Va., initiated national campaigns to attract industries, citing, as inducements, the unlimited supply and the prevailing low rate for the fuel. As a result tin plate mills, zinc reduction plants and glass factories prospered in this region. The immense glass and steel industries of the Pittsburgh district turned years ago to natural gas for use in the various heating and metallurgical processes. When the low supply began to fail, gas from West Virginia was piped in to relieve the shortage. In fact, the abundance of West Virginia gas was largely depended upon to make good the shortages in its surrounding states. Gas was piped into many Ohio and Kentucky cities, being used for both domestic and industrial purposes.

The supply of West Virginia gas has been failing for many years. Industries in surrounding states, once dependent on this fuel, have long since turned to the use of coal, and most significant of all is the statement that in the Clarksburg and Fairmont regions, industries, in recent years, have found the gas supply so depleted that they have been forced to turn either to the use of coke or producer gas. Even householders in this same gas belt of West Virginia, where the supply was once inexhaustible, have been obliged to use coal for heating purposes. Testimony before the Ohio Public Utilities Commission, a few years ago, on the subject of the diminution of the natural gas supply in West Virginia, was to the effect that there has been a decrease in the amount of gas supplied for the year, and that it was necessary to import gas from neighboring states.

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Commission in December, 1919, brought out that gas production in West Virginia had decreased 5.7 percent, in 1918, and would amount to 15.4 percent in 1919. The West Virginia Legislature, cognizant of the diminishing supply, recently enacted legislation forbidding the sending of gas out of the state, except that which was not needed for the use of its own citizens. To such as are inclined to quote the newly found McKeesport gas fields as an offset to diminishing supply, let it be understood that these wells have not bettered in the slightest respect the situation in Pittsburgh, where, during the winter of 1919-20, there was a woeful shortage in gas pressure.

While the necessity of turning from the use of natural gas to coal raised no particular difficulty with industries, it is a decided hardship on the domestic user. The convenience and cleanliness of natural gas for both cooking and heating have established it strongly in the regard of the housewife. Little wonder, then, that the diminishing supply is causing consternation amongst domestic users, and that, in view of the statements repeatedly made by gas companies that there is no relief in sight, in the way of increased supply, they are looking to industries to relinquish an unnatural privilege, and to cease drawing on what little supply remains.

OIL

Oil ranks next to natural gas in the scale of convenience. Like natural gas it may be transported in pipe lines, or it may be shipped by rail in tank cars or by water in tank steamers. Because of its odor and fire hazard, oil has never attained the popularity enjoyed by gas as a domestic fuel. It has been much used in the Southwest for locomotive and general steam purposes, and during the past few months has sprung into notice as a competitor of coal in all parts of the country, particularly in New England towns. As in the days of the rush for natural gas, industries are preventing the use of a great natural resource, with little or no thought to expediency.

That fuel oil has certain advantages over coal for the generation of power cannot be gainsaid. They may be summed up as follows:

1. Oil is easy to handle.
2. Less labor is required in the boiler house.
3. Stokers and ash handling machinery are unnecessary.
4. Occupies less space in storage.
5. It is easy to control.

Additional advantages claimed are greater efficiency and greater economy. So many factors enter into the determination of efficiency and economy that these cannot be conceded until all the related facts are brought to bear, but should these prove favorable to oil, it may still be denied that the sum total of advantages can justify the misuse of a priceless national heritage.

OUR OIL RESERVE

The assumption is oftentimes made that prolific oil reservoirs are earth-hidden in endless profusion and that all that is needed is more "wildcassing" to bring in new fields and new supplies in abundance. The average person, while reading of the marvelous production of a new well or pool, seldom takes into consideration the rapid decline of earlier producing fields. Big strikes are items of public interest and are played up as news by the dailies; the decline of a pool is told of only in some geological survey report which seldom comes to the notice of the average reader. Unmined petroleum, like other mineral resources not exposed to sight, cannot be inventoried with certainty, but proven and prospective fields are so broadly known that the resources may be estimated within a reasonable margin of error. This has been done by the United States Geological Survey with the following result:

Barrels

Mined to date (1859-1917) per capita.......42
Rate of production, 1917...................3.4
Now underground and available.........70

It will be seen that at the rate of production in 1917

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At Lafferty, Ohio
the available oil supply is sufficient for only 20 years. But the present demand is already in excess of the demand in 1917 and is constantly growing, so that it is quite probable that the supply will last only 10 years, or until 1920. This is calculated with a generous allowance to cover possible uncertainties of future discoveries. The factor which will do most to prolong the supply is an increase in price, for with but a few years of quantity production ahead, it is inevitable that the price of oil would rise.

The optimist points to our vast oil shale deposits as a prolific source of future supply. Undoubtedly much of our oil will be derived by distillation in the future, but when that day arrives it will mark the passing of cheap oils and their derivatives. Mark Requa states that to develop this source on a scale comparable in output with our present oil supply would require an industrial organization greater than our entire coal mining organization. In other words, when the turn from wells to shale is made, the country will be called upon to support a vast army of workers, and can expect to pay greatly increased prices.

THE INROADS OF FUEL OIL.

The coal industry, it may well be admitted, has been considerably disturbed over the inroads made by fuel oil. Half of the industries in Providence, R. I., are reported as having substituted it for coal; immense storage farms have been located at Providence, R. I., Chelsea, Mass., and Portland, Me.; one oil company is reported as having spent $25,000,000 on its plant at Providence. Everywhere throughout the country there is evidence of the intrusion of fuel oil. It is quite fair to assume that economy is the chief argument of the oil salesman in converting a user to his kind of fuel, and that it is the lure of the dollar which is responsible for industry's part in the misapplication of fuel oil.

WHY OIL SHOULD NOT BE MISUSED.

Coal men have been combatting oil with various strong arguments, but it would appear that none can be stronger than an appeal on the grounds of our broad national interests. Oil is absolutely essential to the welfare of our nation, because:

1. Gasoline is needed for the continually increasing use of internal combustion engines in automobiles, airplanes, motor trucks and farm tractors. These agencies have been so highly developed and their use so widely extended that practically every phase of national activity is involved, and in particular there is involved the assurance of our food supply and the security of our national defense.

2. Mechanical equipment is dependent upon lubricants made from petroleum. Vegetable and animal oils are unsuited for general employment, as they oxidize and thicken with use. M. L. Requa, one of our highest authorities in oil, writes: "For petroleum there is no satisfactory substitute as a lubricant; its exhaustion spells commercial chaos or commercial subjugation by the nation or nations that control the source of supply from which petroleum will be derived. There is but one escape, and that is the discovery of some substitute, now unknown, that will as efficaciously and economically lubricate the machinery of the nation." George Otis Smith and Van H. Manning have several times recently sounded the same warning. The fact that the asphalt base oils (to which class fuel oils belong) are not now relied upon as lubricants, carries no assurance that they may not be called upon in the near future. Necessity may even compel the use of shale oil for this purpose. In any event it would be foresighted policy for the prospective user of fuel oil, before signing a contract, to insist upon the oil salesman assuring him a plentiful supply of lubricants 10 to 20 years ahead.

3. Kerosene supplies a cheap light to millions of the country folk of the nation. A failure in supply would return much of the world to the flickering candle, a rever-
The Official Miner's Service Record and History

denial that exhaustion is imminent and that continued indifference to the handwriting embazoned on the wall must surely lead to disaster.

WHY COAL SHOULD BE GIVEN PREFERENCE.

In addition to the broad reasons for combating the misuse of fuel oil, we may well inquire into other reasons why coal should be given the preference for ordinary steam purposes:

1. The available supply of coal is a known quantity and plentiful. Contrast the coal reserve per capita with the figures given on oil in an earlier paragraph:

Coal Reserves of the United States Calculated to a Per Capita Basis.

<table>
<thead>
<tr>
<th>Coal Type</th>
<th>Now</th>
<th>Mined to Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anthracite</td>
<td>190</td>
<td>28</td>
</tr>
<tr>
<td>Bituminous Coal</td>
<td>15,000</td>
<td>28</td>
</tr>
<tr>
<td>Lignite Coal</td>
<td>20,000</td>
<td>practically untouched</td>
</tr>
</tbody>
</table>

2. All coal used in the United States is produced within the country. The coal deposits are so widely scattered throughout the nation that a short haul usually serves to bring the product from the mine to the factory or mill. Fuel oil, on the other hand, is conveyed long distances and delivery is subject to a multitude of possible delays, not the least of these being the vagaries of an unstable foreign government. Read the Force Majeure clause of a typical contract, as follows:

"The seller shall not be responsible for any delay, failure or omission in the performance of any of the stipulations, obligations and conditions herein contained caused by strikes, labor disturbances, fire, epidemics, earthquakes, wars, riots, internal disorders, insurrections, revolutions, hostilities, restraints of princes, rulers, or peoples, blockades, the expropriations, taking occupation or confiscation of property, whether direct or indirect, or interference in its holdings, administration or operation of its oil or other properties by civil or military authorities, or by those having or purporting to be affected under color of or pursuant to any constitution, decree or law established pursuant to legal or ostensible authority or otherwise or by the operation of any such constitution, decree or law, the commandeering of vessels or other property, force of any kind, floods, storms, perils of the sea, accidents, explosions, quarantine, accident to or stoppage of steamers transporting the petroleum, stoppage of machinery or pipe lines, cessation or diminution in production of seller's wells, barony of masters or crews of seller's ships, act of God, or any cause whatsoever not within its control, whether of the class of causes hereinbefore enumerated or not, and whether or not any such contingency mentioned in this Article shall arise or any of such causes shall become operative in the Republic of Mexico from which the petroleum supply of the seller is derived, or upon the high seas, or in the United States of America, or elsewhere. In any such case the operation of this contract, so far as necessary, shall be suspended during the period of any such delay, without any responsibility for damages on account thereof, it being understood that the cause of such delay shall be remedied, if possible, with all dispatch, and the performance of this contract resumed at the earliest practicable time after cessation of such interruption unless this contract be terminated, as hereinafter provided."

3. Coal is mined and marketed by more than 5,000 different interests. Competition is keen at all times and the price at which coal is sold represents a moderate return upon investments. On the other hand, the oil supply of the world is in the hands of a very few interests and there is an absence of real competition. The price at which oil is sold is not based upon a reasonable return, but rather upon the selling price of coal.

4. The storage of coal is less difficult and is attended with less risks than with the storage of oil. Any receptacle in which oil is stored must be provided with means for heating its contents, as the oil cannot be handled in cold weather unless it is heated.

5. The soot given off in the burning of fuel oil is particularly offensive because of its oily nature. The odor is also extremely objectionable, and is made more pronounced by the high percentage of sulphur in the asphalt base oils.

6. Coal is handled with practically no fire hazard by

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thousands of plants, whereas the extreme fire hazard from oil is ever present. Once ignited there is no means of extinguishing burning oil.

7. The use of fuel oil on the Atlantic seaboard will tend to raise the price of anthracite coal to domestic consumers for the reason that so long as competition holds down the price of steam anthracite to a point below its cost of production, it will be necessary that the domestic sizes carry the burden of difference between the production cost and selling price of steam sizes.

RELATIVE ECONOMY OF THE TWO FUELS.

The question of economy must always be a relative one, depending upon the price of oil and coal and the efficiencies in burning. A fair average steam efficiency of a plant burning coal is probably about 63 percent, and for oil 78 to 80 percent, when it is carefully handled. In different handling or laxity in maintaining adjustments may bring the efficiency of the oil-burning plant considerably below 78 percent, while on the other hand efficiencies of from 76 to 78 percent are not uncommon in coal-burning plants. In some cases, the efficiencies of both types of plants are quite nearly the same.

WHERE SHALL FUEL OILS BE USED.

With these and other arguments advanced against the use of oil, it may well be asked what commendable uses may fuel oil be put? Omitting the use of derivatives, these may be stated as follows:

1. The use of oil should be encouraged as a motive power for ships. Edward N. Hurley states a number of advantages, amongst which may be mentioned the following: 40 percent is saved in bunker space and thereby made available for cargo in a freighter; a reduction of 90 percent may be made in the fire-room force and, therefore, there is a saving in quarters for the crew; oil-burning vessels can make from 16 to 30 percent more mileage than can coal burners; oil is more easily and quickly taken on board; the necessity of frequent painting is eliminated. Fuel oil is used in 357 vessels of our navy, and the Shipping Board has announced that there will soon be 1,731 oil-burning vessels of the merchant marine under the American flag. This demand involves fuel oil equivalent to nearly one-half of our present output, and, unless there is some corresponding decrease in other demands, this new requirement must be met with an increase in production of crude oil of nearly 200 million barrels.

2. Oil as a motive power should be preferably used in internal combustion engines where an overall efficiency of from 30 to 35 percent can be obtained, whereas in the average steam plant it is but 10 to 15 percent.

3. Oil should be used as a fuel in localities where inferior coals abound. The whole southwestern portion of the United States is almost entirely dependent upon fuel oil; Pacific coast shipping and naval activities on both oceans draw much of their energy from this substance.

The question of coal versus fuel oil is of such vast importance that its discussion should not be limited to those directly interested in either fuel. The issues involved far transcend the personal interests of two rival contenders for fuel supremacy; they are national issues in every aspect. We stand everywhere accused of being a wasteful nation; we confess waste in the cutting of our forests, in the mining of our coal, and in the prodigal use of our natural gas. It is a striking fact that the greatest wastefulness characterizes the exploitation of our energy resources. But the fact that we have been nationally improvident in the past is no reason for caution in the future. The late war emphasized, amongst other things, the strength of a nation rich in natural resources, and no man or group of men should be permitted to jeopardize the national welfare for reasons that are personal or selfish. Captains of industry, large and small, must realize that petroleum is a basic necessity as much as when cotton or wool, and knowing this they must determine which is to take precedence—a gambler's chance to add a few dollars to their profit account or a risk to stand for the welfare of their country.

MICHAELE GALLAGHER.

General manager, Wheeling & Lake Erie Coal Co., general offices. Cleveland, O.

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The Official Miner's Service Record and History

Simple First-Aid for the Miner

By W. A. LYNOTT and D. HARRINGTON,
(U. S. Bureau of Mines Bulletin)

It is the aim of nearly all thinking men who are interested in mines or mining to get as much first-aid training as can be had, and mining companies and miners are cooperating with the Bureau of Mines in training to have as many men trained as possible. It is felt, however, that at present many persons who ought to take first-aid training do not, especially those who have only recently come from foreign lands and are not able to read or to speak English.

Records of miners' hospitals show that more than half of all miners who are hurt have been caught under falls of rock, coal, or ore, and more than one-fourth have been injured by cars or mine locomotives. Miners are injured also by mishandling powder, and by electricity or machinery, by being overcome by bad air, or by being burned by gas that has been ignited. A study of 6,719 non-fatal injuries to miners shows that out of every 100 injuries about 30 are to the legs, about 20 to the feet, about 15 to the arms, about 14 to the hands, about 5 to the shoulders, about 4 to the hip bones, about 8 to the head, and about 4 to the face. Hospital records show that out of every 100 injured men who go to the hospital, about 43 have broken bones, 15 have some part of the body crushed, 11 are badly bruised, and about 10 have open wounds. The remainder have dislocations, strains, bruises, and other injuries.

Hence it is seen that in mines the first-aid man must be ready to treat most often the injuries to legs, arms, feet, and back, and to treat less often burns, electric shock, dangerous bleeding, etc.

As this is written for all miners the word "rock" is used to mean slate, coal, and all kinds of ore as well as ordinary rock.

What To Do At Once When a Fellow Miner Is Hurt.

Be calm and remain so.
If he is under a fall and you cannot move him, go for help.
Send for the boss; send for the first-aid team and first-aid supplies; send for the stretcher; see that the doctor is called.
Take charge and give orders until the boss comes.

Find where the man is hurt before trying to move him.
If you believe that a bone is broken or there is a wound

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or that hemorrhage has started, remove the clothing over the part injured to make your examination.

Don't try to pull off clothing; cut or rip clothes if they must be taken off.

If his back is hurt, don't move him until you have help or the doctor comes.

Always place the injured man on his back, with his head lower than the rest of his body (unless he is bleeding freely about the head); open his collar and loosen his belt.

Always look for bleeding, and if the blood is bright red and coming in spurts, try to stop it at once.

Don't give an injured man brandy or whiskey or any stimulants while he is bleeding; keep him quiet and warm.

If any bones are broken, put on splints before moving him. If you are in doubt as to whether the bones are broken, always put on splints.

If you find that he has no broken bones and is not bleeding or spitting blood, but is very pale and is cold and breathes fast, keep him quiet; lay him on his back, lower his head, cover him with brattice cloth, clothing, blankets, or the like; place safety lamps, if they are used in the mine, under covers near him as an aid in keeping him warm; do not let others crowd around him, but give him plenty of air and get the doctor as soon as possible. Don't give him whiskey or brandy; if he can swallow, give one teaspoonful of aromatic spirits of ammonia in one-half glass of water, hot coffee, or hot tea in sips.

If a man is burned, rip or cut off any clothing that might rub; if the clothing sticks to the burned skin, do not remove it, but remove the loose clothing by cutting around the piece that sticks; the doctor will remove it later.

If there is an open wound, do not touch it, and do not wash it or pour anything over or into it. If clean gauze can be found nearby, cover the wound with it and tie it firmly, but not too tightly. If no clean gauze is at hand, place the injured part in such a position that it will not be rubbed and hold it there until first-aid dressing can be obtained. Do not remove an injured man until the proper dressings have been applied, unless the man is on a live electric wire or under a fall of rock.

In placing an injured man from the mine, place him carefully on a stretcher and put the stretcher and the man in a mine car; fix the stretcher solidly in the car so that it will not slip; if necessary get in the car and hold the stretcher; or, if the distance is not too great, carry him outside on the stretcher. Keep him warm by covering him with coats and other clothing, blankets, or the like; place safety lamps under covers near him. If no stretcher is at hand, make one out of two drifts, two mine-lamping bars, or two pieces of pipe with three or more crossbars or jumpers or some brattice cloth or blankets. A stretcher can be quickly made from two drifts and three jumpers.

Always test the stretcher before placing the injured man on it; have some other man lift on the stretcher to find out whether it is strong enough. In carrying a man on a stretcher take him feet first except when going up a hill. Bring the stretcher to the man; do not carry the man to the stretcher.

If an injured person must be carried out of a mine through a narrow working place or passages having sharp turns, the stretcher described would be too long. Under such conditions a short stretcher may be made of drifts and jumpers or drifts and brattice cloth, and the patient may be carried in a sitting position. However, the patient could not be carried in such a position if he had suffered certain wounds or injuries, such as a wound causing bleeding of an artery in the leg or a badly injured back. Always be sure to send word to the doctor as soon as possible after a man has been hurt.

Every Man Should Have a First-Aid Packet.

Every man who works in or around a mine should have a first-aid metallic packet in his pocket or in his tool box near the working place; he may need it at any time for himself or for his "buddy" or for some man working near him. Nearly all mine bosses supply such a packet free; it weighs little, takes up little room, and may be the means of saving a life. It contains one triangular bandage and one medium-size bandage compress, both clean, dry, and ready for use. Do not touch the first-aid packet.
until just before using it, and do not put your hands or anything else on that part of the clean cloth that is to cover the wound.

General Directions for Caring for Wounds.

Take as much care of a small wound as of a large one. Blood poisoning and death are often caused by a very small wound. Prevent them by covering the wound with a bandage compress from a first-aid packet, tying it firmly in place to prevent its slipping and to assist in stopping the bleeding. Then hold the compress in place with a triangular or narrow bandage.

General Directions for Caring for Bleeding.

Loss of blood may cause death, even if the wound is slight; therefore always look for bleeding and try to stop it at once.

Bright red (brick-dust red) blood flowing very slowly or dark blood in a steady flow (bleeding of veins leading back to the heart) may be stopped by placing a bandage compress over the wound. Tie firmly and so bring pressure directly on the wound. Do not touch the wound with the finger or with anything except a bandage compress, and do not touch that part of the compress which goes over the wound.

If bright red blood comes in spurts, it is coming from an artery direct from the heart and shows a serious injury. Have the patient lie down and keep quiet. Try to find the blood vessel above the wound and press your finger over it to stop bleeding, while a pad is being made ready; do not place the finger in the wound, but apply pressure between the wound and the heart. The part that is bleeding should be kept higher than the heart.

Bleeding from Head or Face.

Bleeding from the head or face as a rule can readily be controlled by taking a piece of bandage compress and carefully applying it over the wound without touching with your fingers the wound or that surface of the compress that comes next to the wound. The compress should be held firmly in place by a triangular or cravat bandage passed around the head. If bones of the head are broken, do not pull the cover over very tightly over the wound. When bright red blood spurts from the head, the head should be held slightly higher than the rest of the body.

Bleeding from Chest or Back.

If bright red blood spurts from a wound in the chest or on the back, place a bandage compress over the wound and tie the pad so as to press it tightly against the wound.

Bleeding from Arm.

If bright red blood spurts from a wound on the arm at any point from the shoulder to the hand, press against the lower and inside part of the large muscle of the arm, along a line corresponding to the inner seam of the coat sleeve, about 4 inches below the armpit, to stop the flow; then place at this point a tightly rolled pad or a small piece of rock about the size of an egg, wrapped in cloth, and tie firmly with a cravat bandage, belt, suspenders, or handkerchief, in such a way as to press the pad or piece of coal or rock against the arm by twisting the cloth or handkerchief with a short stick. While the flow of blood is being stopped, have an helper cover the wound with a bandage compress and tie firmly. Be careful not to keep tight pressure too long or the arm may die. In fact, a tourniquet should not be used unless absolutely necessary. Loosen the pressure on the pad or piece of rock slightly every 20 minutes or half hour, then, if the bleeding starts slightly, tighten again.

Bleeding from Hand.

If blood spurts from a wound on the back of the hand, stop the flow by pressing the thumb over the inside of the wrist; then place a pad or wrapped piece of rock over the point where the thumb has been placed, and press by tying the pad firmly around the wrist. When the flow of blood has stopped, cover the wound with a bandage compress and tie firmly. If the wound is in the palm of the hand, place a bandage compress over the wound and tie this in place, make a pad of gauze tightly rolled over.
a piece of rock or coal, put it on the bandage compress in
the palm and bandage the fingers tightly over the pad.

**Bleeding from Leg.**

If blood spurts from any part of the leg from the hip
to the foot place a pad, or a piece of rock about the size
of an egg covered with cloth on the inside of the leg on
a line corresponding to the inner seam of the trousers
about 4 inches below the point where the leg joins the
body; tie the pad (or covered rock) tightly with a cravat
bandage or handkerchief, belt, suspenders, or strip of
brattice cloth, and by twisting with a short stick press
the pad against the leg until the flow of blood is stopped.
About every 20 minutes the handkerchief or cloth bandage
may be loosened, and if the bleeding is stopped the pres-
sure may be left off; but if the bleeding starts tighten the
pressure again and allow it to stay another 20 minutes.
Cover the wound with bandage compress and tie firmly.

**Bleeding from Foot.**

If blood spurts from any part of the chi-f foot, place
a pad or a piece of rock wrapped in cloth over the back
part of the inner side of the ankle, hold in place with a
bandage or handkerchief, and apply pressure by twisting
with a short stick. Cover the wound with a bandage
compress.

**Miscellaneous Precautions.**

If a man is bleeding very much, as when a leg or an
arm is cut off, it may be necessary to place pressure on
the blood vessel itself at the point where it is laid open;
in this case the fingers may be placed in the open wound
itself, if the pressure elsewhere does not stop the flow
of blood. This action is particularly necessary when the
arm is torn out of socket or the thigh cut off close to
the hip.

Under no circumstances try to stop bleeding by the use
of mud, cobwebs, tobacco, vinegar, or the like. When
a man is bleeding freely do not give him brandy,
whiskey, coffee, or anything except water to drink.
Do not allow anything to touch the open wound except
a clean, dry cloth or bandage compress, preferably
sterilized.

Keep the patient quiet and warm and give him plenty
of air.
Get him to a doctor or hospital as soon as you can.
The best practice is always to cover the wound at once
with a bandage compress, secured by its tails. The tri-
grangular or cravat bandage should be wrapped around the
part, each turn drawn a little tighter. If bandages fail
to stop the bleeding, apply a tourniquet. In general, the
use of several bandages, each drawn a little tighter than
the one before, is much better than a very tight tourniquet.

**Dressing for Broken Bones.**

If a man has been hurt and cannot use some part of
his body, such as an arm or a leg, look carefully for swell-
ing, deformity, or some sign of unusual moving in that
part of the body. Occasionally in handling the limb
broken bones may be heard rubbing against each other,
but never move the limb in order to hear this grating
sound. The limb should be handled with care so as not
to cause the broken bone to break through the skin.
If the flesh has not been broken, the clothing can be re-
placed on the limb. If the flesh and skin also have been
opened over the bone broken, the bleeding, if red and in
spurs or dark red and in a steady stream, should be
stopped at once. Care should be taken to rip or cut cloth-
ing away and to cover the exposed wound with a clean
bandage compress before trying to bring the broken part
back to place. Do not touch the exposed bone or wound;
bring the parts, slowly and carefully, as nearly to place
as you can; always hold the bones underneath on both
sides of the broken bone before attempting to bring the
broken part back to place. Do not try to set the leg or to
bring the bones into exact place the doctor will do that.
Do not move the injured person until the bleeding and
broken bones have been taken care of; if there is great

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danger from bad roof, it may be necessary to remove him to a nearby safe place, but the moving should be done with great care. Keep him warm and have him lie down.

In treating broken limbs you should place splints as directed below along each side of the limb, so that the position of the bone will not do any further damage to the patient, and so that he will be more comfortable and can be transferred with less danger. The splints should be so padded that they will allow for the deformity resulting from the break.

**Broken Arm.**

If the arm (between elbow and shoulder) is broken, take two small boards about as long as the arm from the shoulder to the elbow and 3 or 4 inches wide, and wrap them with cloth (handkerchiefs, clothing, burlap cloth, clean bandage, or the like): place the longer board on the outside of the arm from shoulder to elbow and the other on the inside from armpit to elbow. Tie these boards (or splints, as they are called) firmly together in at least one point above and one point below the break, using a bandage—handkerchiefs, belt, suspenders, strips of burlap cloth, or the like—for tying. The hand and arm should then be brought across the abdomen and held by a sling made of handkerchief or other cloth hung from the neck.

**Broken Forearm.**

If the wrist, hand, or forearm (between hand and elbow) is broken, cover the open wound, if any. Then pad two splints 4 inches wide and one quarter-inch thick, and long enough to reach from the elbow to the last joints of the fingers. Place one on the inner side and one on the outer side of the forearm. Use three narrow bandages to hold the splints in place. The fracture should be dressed with the thumb pointing upward. Then place the arm across the body and put it in a sling from the neck.

**Broken Collar Bone.**

If the patient has great pain near the neck around the shoulder and his arm hangs down and he cannot move it, yet no broken bones are found in the arm, his collar bone may be broken or his shoulder may be dislocated.

Do not bring his arm to the side of his chest, but place a pad about as thick as a man's wrist, which may be made from burlap cloth or a small blanket, under his armpit and along the side of his body. Keep the elbow away from the side of the body; rest the arm over the padding and hold in this position, the fingers pointing toward the opposite shoulder, by a cravat sling passed around the neck. Bandage firmly in this position with a cravat bandage over the elbow and around the body and another cravat under the padding and the elbow and tied over the opposite shoulder.

**Broken Shoulder Blade.**

A broken shoulder blade will be known by pain in the back below and in the side of the neck, the pain being more severe when the arm is moved. Place bandage compresses around the body, covering the shoulder blade as much as possible, and tie firmly. The arm should then be placed in a sling.

**Broken Ribs.**

If a man after an injury has pain in his side when breathing, he may have broken ribs. Place a number of handkerchiefs, cravat bandages, or other cloths folded in 4 or 5 inches wide, tightly over his ribs, around his back, chest, and the upper part of his abdomen. Before tightening the bandages have the patient force air from his lungs. Another method is to use a 4-inch muslin bandage around the chest, drawing it tight from top to bottom after the patient has forced air from his lungs.

**Broken Leg or Thigh.**

If a leg is broken, place the man on his back; if there is bleeding, stop the flow of blood and cover the wound. Wrap two boards, about 3 or 4 inches wide, with cloth, such as burlap cloth or old shirts; one board should be put on the outside of the leg and reach from under the arm to just below the foot; the other should be placed on the inside of the leg and reach from just below the board to the point where the leg joins the trunk. These boards (splints) should be tied firmly together around the leg in four or five places. The splints should be padded with cloth.
enough so that the boards will not press against the protruding bone or any swelling caused by the broken bone. This same dressing can be used for a broken thigh.

**Broken Kneecap.**

If the kneecap is broken or torn out of place, a splint about 4 inches in width, reaching from the upper part of the thigh to the heel, should be prepared, being well padded and placed underneath the leg so that the leg will not be bent at the knee; bandages should be tied around the leg and the splint at the ankle, just above and below the knee, and at the upper end of the splint.

**Broken Foot or Ankle.**

If the foot or ankle is broken, use two splints to reach from 1 inch below the foot to about 4 inches above the knee. The ends of the splints below the foot protect the foot when the patient is being handled. Tie the splints in place with bandages.

**Broken or Badly Injured Back.**

If the injured man’s back is hurt and he is conscious of no feeling in his feet or legs, his back is probably broken, and you should take great care in handling him. Move the injured man as little as possible. If his back is bent, do not try to straighten him, if he cannot be placed in a straight position with pain or without force, send for the doctor. If his back is straight, make a splint of two boards 3 or 4 inches wide, 1-inch thick, and 16 inches longer than the man; on either end, where the ankles and the shoulders will come, tie or nail these boards together with the crosspieces underneath, leaving a space about 3 inches between the boards. Place another piece across the center of the boards. The long splints should be wrapped separately and smoothly with cloth or blankets. The man should be lifted by one man at his shoulders and one at his feet and one, or possibly two, should place their hands under his back and hips. All should lift gently at the same time, just high enough to allow another man to push the splint underneath the injured man, after which he should be lowered. He should be firmly tied to the splint by cravat bandages, cloth, or wide rope carried under the splint and over his legs, stomach, and chest. Two of these ties should be placed over his chest and stomach and one over his hips, and his legs should be tied separately to the splint in at least four places. A coat or jacket may be placed under his head. The end of the splints can be used as handles in carrying the man.

**Broken Hip.**

Oftentimes an injury is received in the hip and the man will be unable to move his leg, or may be able to move it slightly with great pain. It may be impossible to make out any broken bones. You should remember that the break may be directly in the hip or the hip may be dislocated. If it is a dislocation, then the knee and the foot on the injured side will rest on the opposite limb. Then use a board 7 feet long and wide and thick enough to hold the patient, push blankets or the like under thigh and leg between ankles of patient to hold limb in line of deformity. If a hip is broken, the foot usually turns out; then apply same dressing as for a broken leg or thigh. The legs, padding, and splint should be held together by bandages tied around the splint and separate legs. Place the injured man on a stretcher in such a way that his weight will not cause pressure on his hips.

**Care of Sprains and Bones Thrown Out of Joint.**

If a man has received an injury around a joint and if there is nothing to show that a bone has been broken, it is well to bear in mind that the joint may be out of place. If no broken bone can be found and the injured man cannot move his leg, arm, or foot, and has much pain at a joint and possibly some swelling, the bones have probably been thrown out of joint. Do not try to bring the parts back into place; help the patient to hold the injured part in the position in which you found him by the use of pads made of coats, burlap, blankets, or the like; splints may be used when the hip, knee, or ankle is out of joint.

When a Man is Overcome by Electric Shock or Bad Air.

When a man is caught on a live electric wire, if you know the switch is to be found nearby, cut off the electricity; or throw a bar of iron, such as a tamping bar or drill, across the steel rail and the wire, or across both wires if he is caught by two wires; or, if an ax with dry handle is nearby, chop the wire apart by a quick, heavy

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blow. Don't take hold of the live wire yourself. If you cannot cut off the electricity, stand on a dry board (do not stand on the iron track rail or anything wet), hold a dry cap, glove, or thick cloth in your hand, and, grasping the man's clothing, pull him from the wire or place a loop of dry cloth or rope over the man's feet or head and jerk him from the wire.

After a man has been taken from the wire he may be alive though he seems dead. Open his collar and place him face downward on a blanket, brattice cloth, or coat spread on the floor. One of his hands should be held straight out beyond his head, the other placed under his head. His head should be turned to one side and his tongue pulled forward, any tobacco, gum, false teeth, or the like being removed from his mouth. Put a folded jumper or coat under the lower part of his chest if he is thin, straddle him on your knees, facing his head, with your knees a little below his hips; then with fingers outstretched place your hands at the lower part of his ribs with your thumbs nearly joining; then press downward and inward; then take pressure off slowly, keeping hands in place; again, with outstretched fingers as before, press downward and inward, and so on, about 16 to 20 times every minute. Keep this up for at least three hours if he does not start to breathe sooner. When he starts to breathe, treat his burns and keep him warm by covering him with coats, jumpers, blankets, or the like, or use covered safety lamps, hot-water bottles, or hot bricks, until the doctor comes. Do not give brandy, whiskey, coffee, or any other food or drink unless he is able to take and drink, then give one teaspoonful of aromatic spirits of ammonia in half a glass of water or hot coffee slowly. Do not place against the skin any hot article that might burn it. Place a thick blanket or cloth over the skin and be sure that you can hold the article in your own hand without burning it.

If a man is overcome by bad air, powder smoke, after damp, or the like, move him to fresh air, then loosen his clothing, place him face downward on the floor and do as above. When he starts to breathe, try to make him vomit by tickling the back of his throat or by putting your finger down his throat. Never attempt to give an unconscious man anything to drink, as the liquid will choke him.

Burns.

If a man is burned, keep the air from the burned places by covering loosely each place with picric acid gauze and an open bandage. If he is conscious give him sips of hot coffee or hot water.

Burns of Hands or Feet.

If the hands or feet are burned and picric acid gauze or clean cloth can be had, wrap each finger or toe loosely and separately; in wrapping gauze or cloth around a burn, do not wrap tightly; the material should stand loose from the flesh, but should cover the burns and keep out the air.

Burns of Face and Head.

If the face and head are burned, place picric acid gauze or clean cloth over the head, completely covering face, eyes and all burned parts, and cut a small opening for the eyes and near the nose and mouth for breathing; do not let picric acid gauze touch the eyes. Place some gauze or cloth over the tips of the ears and back of the ears between head and ears.

Injuries to the Eye.

If the eye is badly hurt, as by a blast, it is best not to try to remove the bits of rock, etc.; quickly cover the injured eye with a bandage compress (not picric acid gauze) or clean cloth or cotton and tie loosely. Do not allow the patient to rub the eyes, but lead or carry him to a doctor as soon as possible.

If the eye has merely a small piece of rock or other material in it, close both eyes for about half a minute and moisten the eye may form and wash away the particle. If this remedy fails, close both eyes, pull the upper lid over the lower lid two or three times, close the nostril on the other side of the head with the finger, and blow the nose hard. Bandage the eye and wait for the doctor's aid.

Shock.

All injuries cause the patient more or less shock. Shock often makes the patient's skin feel cold and may cause him trouble in breathing or make him feel that he is going to fall, or he may be unconscious. If his condition is very bad, he does not want to know anything of what is going on around him. Therefore, when you treat the injured person it is always best to keep him warm by covering him with clothing or blankets and by applying heat to his body by the use of safety lamps, hot bricks, or bottles filled with hot water. These should be watched to see that they do not burn the patient.

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Manager West Wheeling Mine, West Wheeling Coal Co.

R. W. HALL.
Manager Progressive Coal Co., Bellaire, O.

ROBERT WM. PYCROFT.
(Local Union 2138)

Robert W. Pycroft was one of the first men in this section to get into the big fight. He left Flushing on August 4, 1914, for Ontario, Canada, where he enlisted and was sent to Europe with an outfit which replaced the second Canadian contingent sent across. He was a member of C company, 35th Machine Gun Battalion and was stationed for some time at Shauntcliff, England. Later he became a member of an A. E. F. machine gun battalion, seeing active service under the Stars and Stripes. He fought for seven months on the Ypres front and was killed in the second battle of the Ypres, June 6, 1916. He was but 23 years of age and left to mourn his loss a father and mother in England, two brothers and a sister in this country and a host of friends in this section. His brother, Jim, an employe of the Rosemary mine, saw action on the same field upon which Robert met death.

JOHN SHIMBLE.
(Local Union 1335)

Sergeant Shimble, bearing wounds received in the St. Mehiel drive, was discharged and sailed home from Brest on the day the armistice was signed. He had seen plenty of action up to that time, having been in the army for over a year. He left his home at Maynard for Camp Sherman Sept. 9, 1917 and was later promoted to the rank of sergeant in Co. I, 339th Infantry. He was transferred to Co. B, 30th Regiment, Third Division, after reaching England in June 1918. He took part in the Chateau-Thierry drive, Aug. 3-15, and served on the St. Mehiel front Sept. 6-18. He then went into reserve until Sept. 30 when his outfit was sent to support the 78th Division. On the 16th of October directly in front of Verdun, he was wounded by machine gun fire. He and two wounded companions were trying to make their way back to the hospital when they were found by a "first-aid man." He was in various base hospitals until the armistice was signed.

THOMAS SKILLCARN.
Manager of the Elm Grove Mining Co.

HENRY BROWN.
The first President of Local Union 2262.
NOAH W. MORRIS.
(Local Union 44)

HARRY J. WAGNER.
(Local Union 44)

WILLIAM BANISTER.
(Local Union 2262)

NATALE ENTRIZZI.
(Local Union 1396)

C. B. CREAMER.
Secretary L. U. 2262

THOMAS D'PIETRO.
Sec'y. L. U. 425, Flushing, O.
FRANK BROWN.
(Local Union 1962)

HOWARD JAMES.
Financial Sec'y. L. U. 2581.

R. U. WALLACE.
Treasurer Local Union 2262.

CHARLES PURDY.
(Local Union 3841)

W. O. HOURTON.
(Local Union 2262)

ALEX BARCHICK.
Secretary Local Union 1302.
CHARLES N. CHRISTIAN.
(Local Union 183)

WILLIAM WOODCOCK.
(Local Union 4325)

HARRY NEITZELT.
(Local Union 2386)

FRANK G. TOOTH.

WILLIAM HUNT.
Stewartsville, O.

LYLE HELMS.
Stewartsville, O.
ANDY TOTH.
President Local Union 284.

MIKE STOCK.
(Local Union 2181)

FRANK BENEDICT.
(Local Union 2262)

ALEX TUCKOSH.
(Local Union 2181)

CHARLES SCHROEDER.
(Jacobsburg, O.)

WILBUR HESS.
(Stewartsville, O.)
JOHN McGONIGAL.
(Local Union 139)
After two months' fighting in the Verdun sector, where some of the most savage engagements of the war took place, Private McGonigal was killed in action, October 27, 1918. He was 29 years of age and had been a member of Local Union 139 for 10 years at the time he was called into service, March 19, 1918. He sailed for Europe in June with Co. D, 330th Regiment, 83rd Division. He reached France in July and was immediately assigned for service with Co. G, 102nd Regiment, in the now famous 36th Division. He was in the St. Mihiel drive before going to the Verdun front.

WILLIAM VERKOSKI.
Pres. L. U. 314, Fairpoint, O.

JOHN KOVACH.
Financial Secretary of L. U. 292.

THOMAS HAINES.
Sixty-two years in the mines! That is the record of Tom Haines, member of Local Union 2931. He was born at Gloucestershire, Eng., October, 1846. At the age of four he went with his parents to South Wales and shortly afterward went to work in the Cumber Colliery mines. He worked in various parts of the country, coming to America in 1870. He first worked at the Pigeon Run mine, Massillon, O., then at the old Pike Run mine and in 1859 moved to Pithing, working in the Rock Hill mine. He lost a son in this mine, the lad dying from effects of a mule kick. The mine was organized in 1893 and Tom Haines has been a member of the United Mine Workers ever since.

L. A. JENNINGS.
Recording Secretary Local Union 1439.

MIKE PARIS.
Financial Secretary Local Union 1286, Boundary, O.
M. J. BRADLEY

M. J. Bradley was born in Boone county, West Virginia, October 8, 1849. He went into the mines at the age of 20 and has been at it ever since. He became a member of the old Knights of Labor over 40 years ago. In 1870, while working at the Coolburg mine on the Kanawha river, he was struck on the head by a windlass. The blow fractured his skull and for a long time he was not expected to live. He joined the United Mine Workers in 1892 and has been a member constantly since. He moved to Flushing after the 1913 strike and is at present a member of Local Union 2591.
R. O. EVANS.
Recording Secretary L. U. 2591, Flushing, O.

LOUIS FAVALI.
Treasurer L. U. 2362, who has been a fire fighter as well as a miner, as his uniform will show.

JOSEPH SCHWENDER.
Joe Schwender, who is now 54 years of age, started mining at the age of 14 at Raney mine, north of Martins Ferry at 70 cents per ton over a 2½-inch back-action screen. Later the price dropped to 50 cents. He was a member of the Wheeling Creek local, organized into the Progressive Union in 1895. Two years later Schwender moved to Barton and has been since engaged in carpenter and blacksmith work at various mines in that locality.

FINLEY A. BUCEY.
After holding the office of president of Local Union 1963 for six years Finley A. Bucey refused to permit his name to be placed in nomination for re-election. However, at the next election he was again unanimously chosen president. After serving his seventh year as president he accepted employment elsewhere. The local losing what every member considered one of the best officers of its history.

ALBERT WAITE.
Served 12 months as a private in the 302nd Infantry, 26th Division. A. E. F., was gassed in the battle of Verdun and spent four months in a hospital.

LOUIS BLACK.
(Herrick, O.)
Served three years with the Marines in Cuba and is at present confined at the Ft. Lyon, Colorado hospital, where he has been ill for several months.
GEORGE MAUTHE.
Pres. I. U. 2591, Flushing, O.

JOHN H. JONES.
(Local Union 3362)

EDISON BURGEY.
(Local Union 44)

WM. J. DONNELLY.
(Local Union 3362)

FRED NORRIS.
(Local Union 44)

EARL O'GILBEE.
(Local Union 44)
CARL MELOY.
(Local Union 3362)

ALFRED NEITZELT.
(Local Union 2386)

SAM SCOTT.
(Local Union 44)

LAWRENCE USENICK.
(Local Union 2386)

LEE SAFFELL.
(Local Union 2386)

CHARLES HALL.
(Local Union 2386)
CHARLES JONES.
One of the real old-timers of the sub-district. At the age of 66 he is still an active member of Local Union 2150.

JOHN BRIGHT.
An able worker and active member of Local Union 2150, at the age of 62. He is one of the best known men in Maynard, O.

JOHN DAYTON.
(Local Union 2367)
A lad of 17, John Dayton, enlisted in the Army March 1, 1917. He was one of the first to leave for France, sailing from Port Totten, N. Y., July 1, 1917, with the 44th Field Artillery. After almost a year's service he was wounded during an engagement in August, 1918. His parents, however, did not learn of his wounds until very recently. Evidently preferring army life to mine work at Fairpoint he re-enlisted after being discharged and is at present stationed at Port Totten, N. Y.

GEORGE ZUSACK.
This miner-warrior fought on four of the great battle fronts of Europe. He left Maynard for Camp Sherman Oct. 5, 1917, and sailed for France May 1, 1918. He fought for three weeks at Chateau-Thierry and from there was sent to St. Mihiel, where he fought for two weeks, after which he was in the Vesie River sector for eight days. His last engagement was at Verdun where, in October he was wounded in both arms. He was under treatment for five months in a base hospital, returning to New York in March.

CLARENCE E. MERRITT.
Secretary L. U. 83. He was also secretary of Local Draft Board No. 3, St. Clairsville, during war.

CORP. L. M. BARRETT.
Was company weigh boss before and after the war at Dilles Bottom.
DAVID THOMAS.
(Local Union 1744)

David Thomas is one of the pioneers of sub-district five. He located at Maynard in 1883 and has been active in labor and community affairs ever since. His three sons, all miners, served actively in the war.

ROSARIO GATTAMELATO.
(Local Union 2387)

Although crippled for life Rosario has the satisfaction of having served valiantly in the war. In the St. Mehiel drive, in which he received his injury—a crushed ankle—he captured six Germans single-handed and has, as a souvenir, a pistol taken from one of them. He joined the army at Fairpoint Sept. 15, 1917, and trained at both Camp Sherman and Camp Forrest. He sailed with Co. L, 11th U. S. Inf., April 15, 1918, and after a brief training period at Camp Brest, France, and Alsace-Lorraine, went into action. He was a member of Local Union 2387 for eight years.

J. W. LYNCH.
(Local Union 2380)

Private Lynch enlisted with the Canadian forces in Nov., 1917. He was wounded three times by shrapnel and on Sept. 28, 1918, was decorated with the Distinguished Service Medal for bravery in action. He is still in the service.

CARL E. MOSSER.
(Local Union 1962)

Mosser saw some of the fiercest fighting in the war. He participated in the battle of the Marne, Battle of Verdun, St. Mehiel, and was wounded in the Argonne Forest Oct. 10, 1918. He had his left hand shot off. He entered the service Oct. 5, 1917, and was discharged from Walter Reed hospital at Washington, D. C., on March 26, 1919.

SAMUEL H. LANDERS.
(Local Union 2380)

Sam Landers enlisted in the United States Navy May 3, 1917, and served on the U. S. S. Prairie as an electrician until June 5, 1918. After being discharged, he returned to the mines and is at present loading coal at the West Wheeling Coal Co. mine at West Wheeling. He has been a member of Local Union 2380 since its formation.

JOHN M. STILLMOCK.
(Local Union 245)

At the age of 23 this stalwart young miner gave his life for the cause of Democracy. As a member of Co. I, Third Division, Infantry, he, with two companions, was carrying ammunition to the front in the St. Mehiel drive when a shell, bursting near them, fatally wounded Stillmock. He died on February 16, 1919. Prior to the war John was motor operator at the Maple Hill mine and had been a member of Local 245 from the time he started work in the mines. He was known and loved by the entire population of Barton.
A REAL VETERAN.
Joseph M. Jeffers was born March 4, 1846, and has been a miner for the past 58 years. He went into the mines at the age of 15 and was a member of the old Knights of Labor until the United Mine Workers of America was established. He has been a United Mine Worker continuously since and is at present employed as trackman for the West Wheeling Coal Co.

JOHN SMITH.
John Smith is one of the oldest active miners in the sub-district. Although 80 years of age he is still loading coal at the West Wheeling mine and is a member of the mine committee of Local Union 2380. He was born August 26, 1849, and was a member of the Knights of Labor prior to organization of the United Mine Workers.

GEORGE BETHEL.
George Bethel is one of the old war horses of the sub-district. He was born in Wales 59 years ago and like so many of his countrymen went into the mines as a mere child—in his eleventh year. He came to the United States in 1880, going to work in the Mansfield, Pa., field. He joined the Knights of Labor there and in 1882, bearing a card of that organization, moved to Bridgeport, O. He helped organize at the old Maynard, O., pick mine one of the first locals in the old Progressive Union. At present Mr. Bethel lives at Maynard and is Secretary-treasurer of Local Union 1824.

JOSEPH THORNTON.
(Local Union 2380)
Corporal Thornton is one of the real heroes of the war. He spent 22 months in war service, 15 of which were spent overseas, as a member of Co. H, 11th Inf., 5th Div. He was wounded in the left shoulder and left side while in action at Thain Court, France, Sept. 12, 1918. After being wounded he, single-handed, killed nine Germans and captured four, for which he was decorated with the American Distinguished Service Cross and Italian War Cross. After leaving the hospital he rejoined his company at Verdun and took part in the 33-day drive in the Argonne Forest. He is 21 years of age.

PETER CASSOL.
(Local Union 2387)
Peter Cassol died in a hospital at Limonce, France, Sept. 25, 1918. He left Fairpoint, O., on April 26, 1918, and was sent to Camp Sherman, where he was assigned to Co. H, 374th Field Artillery. He was a musician in his company at the time of the outfit's departure for France.

GEORGE GRIFFITHS.
George Griffiths came to Maynard, O., from Del Roy, Carroll county, in 1882, carrying a traveling card in the Knights of Labor. He was a member of the old Progressive Union and helped organize Local Union 3438, U. M. W. of A., at Maynard. He was born in Wales 69 years ago and has been working in the mines since his eighth year.
MIKE EHASY.
Prest. L. U. 319, Barton, O.

FRANK KUPSACK.
Recording Sec'y. L. U. 1833.

GEORGE KLAMST.
President L. U. 123.

FRANK ANDERLE.
Prest. L. U. 416, Barton, O.

GEORGE BRIGHT.
Prest. L. U. 2150, Maynard, O.

JOHN MORRONE.
Checkweighman L. U. 1366.
FRANK LOUIS SUPAN.
(Local Union 93)

NICK DEPOLA.
(Local Union 93)

TONY POLLAVA.
(Local Union 2138)
Private Pollava, as a member of Co. L, 11th Infantry, served for four months in the front line trenches and was wounded by machine-gun fire Sept. 12, 1918, the wound causing the loss of his right arm.

STANLEY MOLESTA.
(Local Union 2138)
Stanley joined the regular army in August, 1917. He saw four months' service up there with Co. D, 23rd Infantry, fought on four different fronts and was wounded at Chateau Thierry.

LAURENCE LAORNO.
(Local Union 183)

JOHN BURCHETT.
(Local Union 2386)
ELMER EWAN.
(Stewartsville, O.)

MIKE BLAKE.
(Herrick, O.)

JOHN LACROSS.
(Local Union 1962)

GEORGE HOWELL.
(Local Union 2138)

LEO W. FARRELL.
(Local Union 3641)

GILBERT DOTY.
(Local Union 2262)
FRANK SANTA.
Treasurer Local Union 234.

FRANK A. BRUCE.
(Stewartsville, O.)

LOUIS UHRIN.
(Local Union 1430)

GEORGE HOPPLE.
(Local Union 2282)

ANDY WALDMAN.
(Local Union 2080)

JAMES TUCKOSH.
Secretary L. U. 2181.
JOHN McMAHON.

Mine superintendent, La-Belle Mine No. 4, Wellsburg, W. Va.

JOSEPH FISHER.

(Local Union 3562)

Joe served in Co. A, 34th Engineers, A. E. F.

RALPH W. TRUNBATH.

(Local Union 3562)

Ralph was a member of a Balloon Company and participated, with the Second Aviation Squadron, in the capture of 500 German prisoners at the time of the invasion of Metz. He enlisted January 1, 1918, re-enlisted at the time of his discharge and is still in the service.

J. H. CHADWELL.

The oldest continuous member of Local Union 1216. He was transferred by card to this local in January, 1906, and elected Checkweighman the following month and Secretary-treasurer the month afterward. He has served continuously in both capacities and has never missed a local meeting except from sickness or when out of the city, since.

SAM WILLETTS.

Recording Secretary L. U. 314, Fairpoint, O.

JAMES ZASTUDIL.

Secretary, Local Union 788, Benwood, W. Va.
For the industrial centers, where war activities led to the greater labor influx and consequent housing congestion, the increases in the cost of living are estimated at approximately 80 percent. For the other towns and cities, where no special war activities resulted and where, as a result, conditions tended to retard some of the more abnormal price advances, the increase may be estimated at approximately 60 percent.

For the coal mining towns as a group no sufficient data exist to determine whether their experience as regards price advances was in any way peculiar. For the most part, the distinctively mining towns are rather small communities, and as a result, have not as a rule been included in any of the recent cost of living investigations.

The most extensive investigations of this character have been those carried on by the United States Bureau of Labor Statistics. These consisted of three separate surveys. The first covered the four war years, 1914 to 1918, but included only the principal shipbuilding centers—18 in number—none of which was in a mining section.

The second survey which included 18 large non-shipbuilding cities, covered only a period of one and a half years—from December, 1917, to June, 1919. Only one of the cities included in this study was, in any sense, a mining center—namely, Scranton, Pa., one of the principal cities in the anthracite fields. In Scranton the increase in living costs during the year and a half covered by the survey was exactly the same—25 percent—as the average increase in the 18 shipbuilding cities during the same period.

The third survey included 66 cities and towns, mostly of smaller size, but covered a period of only one year from December, 1917, to December, 1918. Among these 66 cities were three—Beloit, Indiana; Funa, Illinois, and Danville, Illinios, which may be regarded as bituminous mining towns. For the single year covered by the study, the increase in cost of living in these towns (varying from 10 to 17 percent) was somewhat less than the increases in the 18 shipbuilding centers (22 percent) during the same period. This would suggest that the increase in cost of living in these three towns was not so rapid as it was in the country as a whole. On the other hand, three towns, all in the same general territory, and none of them in very close proximity to a large industrial center, cannot be taken, a priori, as typical of conditions in the whole of the bituminous regions. This is especially so as many bituminous mining towns are, in more congested sections—such as those in Western Pennsylvania—and may be influenced by entirely different factors than those operating in the three mid-western cities above noted.

In view of these circumstances, very definite conclusions can be drawn as to the increased cost of living among bituminous mine workers as a group. In the absence of more complete data the following conclusions seem warranted: (1) That the cost of living in coal mining towns as a group did not increase as rapidly as the highly stimulated shipbuilding and munition centers, where the increase, as above noted was about 90 percent, between 1914 and January, 1920; (2) That in all probability the increase in the mining towns was more analogous to the average for the country after the conclusion of the shipbuilding centers—namely 80 percent from 1914 to January, 1920; (3) That in the absence of precise information to support the probability just mentioned, the only practical assumption is that the increase of mining towns has been about the same as the increase for the country as a whole—namely 85 percent from 1914 to January, 1920. This is substantially the method used by the United States Bureau of Labor Statistics in its estimate as to increased cost of living in the central coal field, recently prepared for the use of the fuel administration. This estimate is given in detail in the December, 1919, issue of the Monthly Labor Review, and is as follows:

**Increased Cost of Living in Central Coal Field, 1914 to June, 1919.**

The increase in the cost of living since 1914 in the central coal field, as estimated by the Bureau of Labor Statistics was 79.8 percent, divided between the different items of family budgets as follows:

<table>
<thead>
<tr>
<th>Items of Expenditure</th>
<th>Average percent of increase in prices from December, 1914, to June, 1919.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Food</td>
<td>78.70</td>
</tr>
<tr>
<td>Clothing</td>
<td>120.50</td>
</tr>
<tr>
<td>Housing</td>
<td>177.75</td>
</tr>
<tr>
<td>Fuel and light</td>
<td>45.07</td>
</tr>
<tr>
<td>Furniture and furnishings</td>
<td>129.62</td>
</tr>
<tr>
<td>Miscellaneous</td>
<td>71.31</td>
</tr>
<tr>
<td>All items</td>
<td>79.80</td>
</tr>
</tbody>
</table>

In this connection the bureau makes the following comment:

"The bureau has no prior data going back to 1914 for the immediate localities in which the mines are situated and it took the average increase in the prices of the different groups of items for a number of industrial centers. While it is not held that the prices in these industrial centers necessarily agree with prices in the coal region yet the experience of the bureau goes to show that the changes in prices in the industrial centers used are fairly representative of changes in the country generally except as to rents. Rents are purely local prices, and therefore changes in rents in a given locality can be obtained only by a special study conducted in that locality."

"I may say that the coal operators' contention has been that rents in mining localities have not advanced as rapidly as in the larger cities, but I am certain that in a district, as the Pittsburgh district is, in western Pennsylvania, that the great majority of the miners who rent live in the large industrial centers, and the smaller industrial cities, located in and around the mines, and the small percentage of miners who are renting from coal companies would not change the cost of living to any considerable extent, so far as rents are concerned."

"The rentals in bituminous mining districts were obtained for the bureau for: 1918. No information was se-
cured as to rents previous to that year or subsequent thereto. It is known, however, that there have been very slight changes in rents of dwellings in these localities—certainly nothing like as great changes as have obtained in other industrial centers. The percentage of increase in rents in industrial centers has been applied to the budgets in the bituminous mining centers. These average increases of the groups of items in the budget, weighted according to the percentage of expenditures in the bituminous mining centers, give a total increase in the cost of living for mining towns of 79.8 percent. If we assume that there has been no increase in rents in these bituminous mining towns, which is probably much nearer the fact, the total increase in cost of living would be practically 78 percent.

It is our belief, based on our experience and the data which we have collected, that the cost of living in mining towns has increased to a greater extent than in other industrial towns. Pending further investigation, however, which we feel certain will corroborate our contention, we are accepting for the purpose of this discussion that the advance in living costs during the period 1914-1920 has been practically the same in mining communities as in other localities, or only 75 percent, reserving the right to make further modifications as the facts become available.

Further investigations as to the Cost of Living and Standards of Living.

From our own experience as well as from the data which we have are convinced that the cost of supporting a family in the mining districts is greater than in the ordinary industrial cities and towns. We expect to see this fact clearly demonstrated by the further investigations which Dr. Meeker, of the Bureau of Labor Statistics, is to conduct for the Commission. In this connection we wish to say that the food administrator in the state of Ohio received weekly reports on retail prices from the mining and other towns in that state. Similar data were undoubtedly secured in the other bituminous coal mining states. These data were forwarded to Washington and are available here in the records of the former United States Food Administration.

If the Commission through its staff would secure these records, and have them tabulated in whole or in part, we believe that the results would be of exceedingly great value to the Commission in making its final determinations. We do not make a formal recommendation that this be done, but we wish to call to the Commission's attention the existence of this valuable information so that it may be made available, should the Commission deem it advisable.

No Hope of Prices Declining.

There is absolutely no indication of any marked decline in prices during the immediate future. Many trained observers see no hope of a decline for many years. Thus Dr. Royal Meeker, United States Commissioner of Labor Statistics, whose position has given him unusual opportunities for studying prices and price changes, declared in a recent interview that he saw "no prospect of any considerable fall in prices for several years to come," and that, on the contrary, prices must go still higher.

Certainly there is no sign of hope in the recent course of prices. From June to December, 1919, according to the figures of the United States Bureau of Labor Statistics, retail food prices advanced 7 percent and wholesale prices of all commodities advanced .5 percent, and the figures of the bureau are completely substantiated by the figures of the two well known private commercial agencies, Bradstreet and Dun. Moreover, for most commodities, the rise prices, over the period just mentioned, as well as over the whole period since the beginning of the war, has been almost unbroken. Occasionally, for a few weeks' time, a decline has occurred, but such declines have always been slight and of short duration—just long enough to raise hopes which were soon to be shattered. Last Sep-

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emember such a temporary decline occurred. This followed upon the beginning of the widely advertised price-reduction campaign of various governmental agencies. Reference to the price figures given in the exhibit on "Cost of Living and Increased Prices," indicates that the decline which occurred was almost solely on foodstuffs, those having been the principal object of the campaign referred to. Clothing showed no halt, nor did such important items to the average consumer as furniture and furnishing goods. And, even the lowered food prices continued for hardly an appreciable time. By November all prices were back at their August level and by December much above it.

As to the probable causes of these steadily rising prices—under-production, war waste, increased circulation medium, profiteering, etc., it is not necessary to enter into a discussion. To the extent that price increases are due to uncontrollable causes we are helpless. To the extent that they are due to controllable causes, remedial steps might be taken by governmental authority. But there is no indication that effective steps of this character will be taken, and, in the absence thereof, we are faced by the pressing fact that there is no prospect of any important decline in the level of prices. It is imperative that any program for the future must be constructed on this fact.

Wage Increases Corresponding to the Increased Cost of Living is Unacceptable.

Whatever the increased cost of living to mine workers during the war may have been, for the Commission to make an award, merely adding to pre-war rates the percentage of increased living costs during the war would be wholly unacceptable. Such a principle cannot receive our approval. It would mean the placing of our sanction upon the preservation of rates of pay and working and living conditions, which were far below a decent level of subsistence and health and which did not have any elements at all of comfort or protection against sickness, old age, or insolvency for any cause. It would mean that we should place the stamp of approval upon a standard of earnings which were inadequate for the proper support of a family, and for retaining children in school until they had secured the essentials of public school training. It would mean the putting of children and young persons to work, and the bringing of boarders and lodgers into the home as a source of income, to supplement the inadequate earnings at the mines of the head of the family.

The minimum wage award which could be given to us would be to add the full measure of the advance in living costs during the war, to pre-war rates of pay. This would, however, be merely restoring our pre-war economic status. It would be an extension of the government policy during the war (which policy was established for patriotic reasons, by mutual agreement of capital and labor) that pre-war standards should be maintained, but that the period of the national emergency should be considered an interregnum, in which capital should not exact undue profits, or labor excessive wages, but all should work together without the impairment of each for the common end. The extent to which the mine workers were true to their pledge and their country is well known to you. It is cor-

Standing—left to right—W. T. Roberts, Burton, O., Local Union 245, who made a good race for Ohio Legislature at the last election; Frank Ledvinka, vice-president of sub-district five; Jerome Watson, now Ohio mine inspector; sitting—Charles J. Albassin, former president of sub-district five, now secretary of the Pittsburgh Vein Operators' Association.

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The facts before you. They did not only did not provide during the war, but from an economic standpoint their condition was impaired. They came out of the war in a worse condition than that in which they entered the conflict. Their deplorable pre-war status was not even maintained. Their rates of pay were increased, but the cost of living increased from 30 to 40 percent more, and the end of the conflict found us like the man in the Biblical parable whose "last state was worse than the first."

The only way by which our members during the war could maintain their pre-war standards of living was, to work harder and longer, and with the termination of the conflict, even this opportunity was denied us because of the restrictions on the markets for coal. For the sake of our country we endured these conditions while we were at war. We cannot endure them longer. The least the Commission can do is to add increased living costs during the war to our pre-war rates of pay. When they have done this, however, they have merely perpetuated the deplorable conditions which prevailed before we entered the great war. The Commission should go further, and we earnestly request and urge, and without hesitation say, that it should go further.

The mine workers before the war barely received a subsistence wage—a wage sufficient for animal needs alone. We wish to have a living wage—an adequate wage sufficient for the average mine worker to maintain an average family in health and reasonable comfort. Such a wage should be the first charge upon the bituminous coal mining industry. We, therefore, respectfully request that the Commission not only restore our pre-war status by adding to our pre-war rates a percentage increase equivalent to the advance in the cost of living, but we most earnestly urge that the Commission go further and add to our rates a sufficient increase to assure us that all the mine workers, including ordinary laborers, will be able to earn a decent, comfortable wage, adequate for the support of an average family in health and according to American standards.

The Duty of the Commission.

As we analyze the status of the Commission there are two fundamental principles which are mandatory upon it so far as the determination of rates of pay are concerned. They are as follows:

1. The Pre-War Economic Status of the mine worker must be guaranteed.

2. Every mine worker is entitled to rates of pay which under the working conditions of his locality will guarantee him a living wage.

The first of these principles arises from the general
new attitude towards the wage earner was contained in the Clayton law which was enacted by the congress in 1914. It stated that “labor was not a commodity or article of commerce.” Only a few months ago this pronouncement was further approved by all of the principal commercial and industrial nations of the world, by the statement in the provisions of the Peace Treaty that “Labor is not merely a commodity or article of commerce.” The attitude of the economists of the past generation, as well as the practice of industry itself, as to the procedure to be followed in fixing wages, may now, therefore, be said to have received the unqualified condemnation of the civilized world.

The practical application of this new principle in preventing the free and relentless play of the forces of supply and demand in fixing wages consists in the acceptance of the more definite principle that every wage earner is entitled to a living wage. By a living wage is meant not merely a subsistence rate of pay, but a wage sufficient after meeting the minimum physical needs of food, clothing and shelter, to yield a balance sufficient for a small degree of comfort and to enable the wage earner to secure some reasonable measure of health, recreation and education.

The maintenance of such a wage level is defended not only on grounds of human and social well-being, but also on the purely selfish consideration that it yields maximum industrial efficiency and output. In other words, the more intelligent employer of labor has conceded that such a wage standard is the most economical and yields the best results from the standpoint of profits.

The Principles of the National War Labor Board. After this country had been in the great war about a year, it became apparent that some official action should be taken not only to maintain but to accelerate the production of our mines, mills and factories. To bring about this, President Wilson summoned a Labor Conference Board, composed of an equal number of representatives of both organized employers and organized employees, with two joint chairmen representing the public, to make recommendations as to the best policy to be followed in order to realize maximum production. This board as the result of its deliberations recommended among other principles the following declaration as to a living wage:

“The Living Wage.”

“1. The right of all workers, including common labor, to a living wage is hereby declared.

“2. In fixing wages, minimum rates of pay shall be es-
established which will insure the subsistence of the worker and his family in health and reasonable comfort."

This principle was accepted and officially proclaimed by the President of the United States in a proclamation of April 5, 1918.

I may say that the labor guarantees of the Peace Treaty absolutely give the workers the right to a living wage.

It has become an essential part of the industrial policy of our government during the war, and was obligatory upon the National War Labor Board, the War and Navy Departments, the Railroad Administration, the Emergency Fleet Corporation, the Fuel Administration and all procurement departments of the administration. Technically speaking, it is still binding upon the Fuel Administration and upon this Commission and will continue to be so until peace is officially proclaimed by the President.

The Labor Guarantees of the Peace Treaty.

Practically a universal sanction by all the commercial and industrial nations of the world was later given to the principle of a living wage in the peace treaty itself. The labor provisions of this treaty, which are practically obligatory upon all civilized nations, state:

"The High Contracting Parties, recognizing that the well-being, physical, moral and intellectual, of industrial wage earners is of supreme international importance, have framed, in order to further this great end, the permanent machinery provided for in Section 1 and associated with that of the League of Nations.

"They recognize that differences of climate, habits and customs, of economic opportunity and industrial tradition, make strict uniformity in the conditions of labor difficult of immediate attainment. But, holding as they do, that labor should not be regarded merely as an article of commerce, they think that there are methods and principles for regulating labor conditions which all industrial communities should endeavor to apply, so far as their special circumstances will permit.

"Among these methods and principles the following seem to the High Contracting Parties to be of special and urgent importance:

"Third. The payment to the employed of a wage adequate to maintain a reasonable standard of life as this is understood in their time and country."

The Fundamental Justice and General Sanction of a Living Wage.

In addition to the political, economic, and social sanction which has been given to the principle of a living wage, it has recently been given a widespread moral,
TRIP READY TO DROP OVER INCLINE.


ethical, or as it were, spiritual approval. Expressed in other terms, the failure of industry to pay a living wage has been pronounced by the leading church denominations, both Catholic and Protestant, without exception as not only anti-social, but opposed to the principles of Christianity.

To demand a living wage for the employees of the bituminous coal mines as essential part of the award of the Commission is, therefore, a very sound position. It has the sanction of the leading employers of labor in this country, as set forth in the principles enunciated and followed by the National War Labor Board. It has been officially approved and followed by the government itself. It has been sanctioned in the peace treaty by all civilized nations. It has the approval and support of all leading church denominations in this and other countries. It is a fundamental, economic and political right to which labor is entitled by every ethical and moral consideration. To deny it a living wage, in the face of the announced policies and practices of our own government, and in the face of the guarantee of all civilized nations in the peace treaty, would be more than equivalent to and more serious than the denial of the right of free speech, free assembly, or religious freedom, or any other civil right of liberty.

Bituminous mine workers have not received and are not at present receiving a living wage.

Bituminous mine workers did not receive before the war, nor do they during the period of actual hostilities, and they are not now during this technical war-time period receiving a living wage, nor are they able on the basis of their present rates of compensation to earn a living wage. This statement is at once apparent when the following facts are taken into consideration:

1. Prior to the war the rates of pay of mine workers were not sufficient to maintain a standard of living, based on health and reasonable comfort.

2. The cost of living during the war has increased faster than the advance made in rates of pay to bituminous mine workers, and.

3. The present rates of pay to the mine workers are, therefore, even more inadequate than they were prior to the war, and are even more insufficient to maintain their families on a subsistence level with a reasonable degree of health and comfort.

An Adequate Standard of Living Prior to the War.

According to the most authoritative students, annual earnings of $900 by the head of an average household were barely sufficient prior to the war for a minimum of phy-
sical subsistence. The best pre-war investigation of this kind was made for the Russell Sage Foundation by Dr. Robert Coit Chanin. The result of his work was published in 1909 under the title, “The Standard of Living Among Workingmen’s Families in New York City.” His general conclusions from an exhaustive inquiry into the income and expenditures of typical families were as follows:

1. “An income under $800 is not enough to permit the maintenance of a normal standard.

2. An income of $900 or over probably permits the maintenance of a normal standard, at least as far as the physical man is concerned.

3. “It seems probable that an amount ranging from $800 to $9000, the standards prevailing among Bohemians, Russians, Austrians and Italians may be maintained, but that it is the exception, rather than the rule, when the more expensive standards of the American and kindred nations are maintained on this amount.”

The results of Dr. Chapin’s investigations, together with the conclusions of other authoritative and official investigations before the war, clearly show that the point of adequate subsistence was not reached until an income of about $800 or $900 was provided. The percentage of family income spent for food remained practically the same, or was greater in families with incomes of less than that amount; in families with incomes of $800 or more, the percentage of income spent for food was found to be proportionately less as income increased, indicating that only then was income sufficient to allow a surplus left from food, rent, etc., to be spent on incidentals.

Chapin’s study furnished further data, which are extremely interesting regarding the proportion of underfed in the various income groups. An analysis of the nutrition values of the food of these families showed that the proportion of underfed families was as follows:

<table>
<thead>
<tr>
<th>Family Income</th>
<th>Percent of Underfed Families</th>
</tr>
</thead>
<tbody>
<tr>
<td>$400-$599</td>
<td>76</td>
</tr>
<tr>
<td>$600-$799</td>
<td>32</td>
</tr>
<tr>
<td>$800-$999</td>
<td>22</td>
</tr>
<tr>
<td>$900-$1000</td>
<td>9</td>
</tr>
<tr>
<td>$1000 and over</td>
<td>0</td>
</tr>
</tbody>
</table>

Of the total number of families earning less than $800 annually, 71 percent were both underfed and under-clothed.

In a steel manufacturing town, Johnstown, Pa., it was found, as a result of a governmental investigation prior to the war, that unless the family had an annual income

Dan J. Kavanaugh, President
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of about $800 or more, the death rate among infants was considerably above the average. Using infant mortality as an indicator of healthful conditions of living, this can be interpreted only as meaning that a family could not provide sanitary housing, healthful environment, and adequate food, or that the mother had to stay at home and not be a wage-earner. The membership of the family or have the proper rest at home, unless the family income was over $800 a year.

From this hurried review of analyses of standards of living before the war, it is clearly apparent that an annual income of at least $900 was essential to the maintenance of the average family of a bituminous coal miner on a bare subsistence level. It should also be noted that most of these studies as to the minimum standards of family life were made during the period of 1907-1910. After these conclusions had been worked out, there was a steady rise in the cost of living which decreased purchasing power and which made necessary, in 1914, a larger amount than $900 for the maintenance of a bare subsistence standard of living.

The Inadequacy of Pre-War Rates of Pay And Earnings of Bituminous Coal Miners.

In the light of these accepted standards as to a subsistence wage the Commission should examine the pre-war rates of pay of bituminous miners to ascertain what extent they measured up to a subsistence standard. Such comparison shows conclusively that the mine workers were unable to earn even a bare subsistence wage.

According to a report made by the Bureau of Labor in 1902 on the basis of a detailed investigation of the families of 758 mine workers, all earned less than $800 a year, 93 percent earned less than $700, 81 percent less than $600 and 54 percent, or a majority, earned only $400 and $500 annually.

One of the most exhaustive and comprehensive investigations ever made of the bituminous coal mining industry was conducted by a special body, the United States Immigration Commission, during the years 1908-1909. It included within its scope practically all mining areas of the United States. The average annual earnings of the native-born were $590 and of the foreign-born, $443. The average family income of these 2,100 families was $677, the American families showing an income of $707 and the foreign-born of $659. In the middle west the average family income was only $532, in western Pennsylvania $558, in the south $696 and in the southwest $582.

Only about two-fifths of the families investigated de-
however, that the mine workers were not securing earnings which were adequate even for a mere standard of animal or physical existence before the outbreak of the Great War.

The inadequacy of Increased Rates of Compensation Granted During the War.

The inadequate wages which prevailed in the bituminous coal mining industry before the war were not even maintained during the war. The cost of living increased faster than advances in rates of pay to the mine workers.

A recent index number of rates of pay for pick miners in the bituminous coal mining industry has been computed by the United States Bureau of Labor Statistics, covering the period 1902-1919. It is based on the rates in the Hocking Valley District of Ohio, as established by the various agreements between the operators and the organization of miners (United States Department of Labor, Bulletin entitled, "Wages and Hours of Labor in the Coal Mining Industry in 1919."). The year 1902 is taken as a base point or as equal to 100.

By the year 1913, through successive advances in rates of pay, the index number had risen to 125 as compared with 1902. In 1914 it had further advanced to 130, in April, 1917, to 149.32, and in November, 1917, the date of the last increase in rates of compensation, to 168.5. During the period of the war, therefore, or from 1914 to 1918, inclusive, the rates of pay, according to this index, advanced 36.4 percent. Cost of living during the same period increased 85 percent. In order that inadequate pre-war rates should be maintained, therefore, the mine worker, in addition to the fourteen percent increase in wages that he is receiving, should receive an increase of 37.2 percent over the March, 1917, rate.

If the rates prevailing in the Pittsburgh District for pick mining, thin vein, run of mine, be taken as a basis, an increase of 55.5 percent is shown in wage rates for the war period as compared with an increased living cost of 85 percent.

In other words, the present wage rate should be increased, in the Pittsburgh district, over and above the 14 percent recently granted, by 55.5 percent in order to bring it up to the same standard in comparison with the cost of living prior to the war.

Furthermore, I should like to call your attention in this connection, that merely raising the wage rate up to the cost of living from time to time does not result in justice to the wage earner, because of the hardships enforced by a rising cost of living between the period of adjustment. Where periods of adjustment are six months or more apart, the wage rate should in equity be raised above the cost of living sufficiently to compensate for inadequacies in the past. If a rate-of-pay corresponding to increased living cost should be fixed by the Commission, for example, in the Pittsburgh district to be effective after January 1, 1920, the amount lost by the wage earners during the previous 27 months should be prorated throughout the 24 months during which the new rate, or whatever time the new rate, is to be in effect. This would add one twenty-fourth of the losses of the miners from November, 1917, to December 31, 1919, to the rate to be established as representing increased living costs during the period since the last wage increase. When this is computed on a tonnage basis it shows that a 50 percent increase in present rates of pay for the next 24 months is necessary if the

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A STREET SCENE AT COLLIERS, W. VA.

Miners of the West Virginia-Pittsburgh Coal Company and their families live in the street here shown.
Commission wishes merely to reimburse the mine workers for the losses which they have sustained from increases in costs of living since November, 1917. These facts, together with the relation between labor costs and value of production, are clearly set forth in detail in Employees' Exhibit, entitled, "Earnings, Rates of Pay and the Relation of Wage Rates to Increased Living Costs, and the Relation between Labor and Production During the War."

Present Rates of Pay Are Even More Inadequate Than Pre-War Rates.

From the foregoing comparison it is at once evident that wage advances during the war have fallen from approximately 35 to 40 percent behind pre-war rates of pay so far as the purchasing power of wages is concerned. If earnings were inadequate before the war, they were obviously even more inadequate during the war, and are now more than one-third less on the basis of a fixed comparison than they should be to maintain the entirely unacceptable standards of living which prevailed in the mining regions in the years 1913-1914. Under the conditions, the need for a living wage is also clearly apparent. If the earnings of the mine workers before the war were over or below a bare subsistence level, adding the increased cost of living since the war would only restore the inadequate pre-war standards. What the mine worker needs, and what the public duty of the Commission demands, is that, irrespective of increase in living costs, the rates of pay of the mine worker should be so increased that he be assured a living wage.

Definition of a Living Wage.

In the light of a need of a living wage, we have had all the available and authoritative data compiled on this subject and carefully analyzed. We have also requested the Commission to have the budgetary studies of the Bureau of Labor Statistics which have been prepared on the basis of living conditions in shipbuilding and manufacturing cities, adjusted to the living conditions of mining villages and towns. This request was made to the Bureau of Labor Statistics. A preliminary survey has been conducted during the past week along these lines in the Illinois and the western Pennsylvania fields by Commissioner Royal Meeker of the United States Bureau of Labor Statistics, with the expectation of conducting a more comprehensive survey later for the use of the Commission. All of these data I am submitting for the consideration of the Commission in an exhibit marked Mine Workers' Exhibit No. 2, entitled, "Standards of Living." This exhibit will show that students of the subject, in endeavoring to ascertain the amount of money necessary to support a family, have analyzed and worked out sever-
strict of self-respect and decency, some insurance and some simple amusements. On the other hand, this level does not include many things which should be included in a proper "American Standard of Living."

All of the studies have taken as a basis a family of five—husband, wife and three children. This is done (1) because the average American family is of this size; (2) because marriage is socially and morally desirable; and (3) because it is necessary that marriage should be practically universal and result, on the average, in a minimum of three children if the race is to perpetuate itself.

All of the studies referred to have dealt with the larger eastern cities, chiefly New York. The costs, would therefore not be strictly applicable to all cities and towns of the country. The differences, however, except in a few exceptional cases, would not be very great.

The Cost of the Minimum of Subsistence.

Estimates as to the cost of maintaining a family on a bare subsistence level have been made in various ways. Professor W. F. Ogurn of Columbia University in a recently published article made a very careful analysis of all preceding studies of minimum subsistence levels and also submitted a budget of his own which he had prepared from an exhaustive study of the actual budgets of 600 families of industrial workers. Another way of estimating the cost of a minimum budget at the present time has been to take minimum budgets of past years that have been accepted as standard and apply the increases from the date of the budget to the present time in the prices of the various items of the budget, thus bringing them up to date. In one exhibit we have done this in the case of some of the most authoritative and acceptable studies made in past years, such as those of Prof. Chapin, who made a study, as already mentioned, of New York families, those of the New York Factory Investigating Commission, and that of the Bureau of Personal Service of the Board of Estimate and Apportionment of New York City. The

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results of other studies of subsistence standards, including those based on the cost of an adequate food supply, are also submitted in our exhibit to the Commission, but the three which I have mentioned are the most important. Those most conservative estimates as to the amounts absolutely necessary for the maintenance of an average family of five persons on a bare subsistence level of physical needs only—food, fuel, clothing and shelter—when brought up to January 1, 1929, show the need of the following annual earnings or income:

<table>
<thead>
<tr>
<th>Description</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prof. Ogurn’s budget</td>
<td>$1,622</td>
</tr>
<tr>
<td>Prof. Chaplin’s budget</td>
<td>$1,632</td>
</tr>
<tr>
<td>N. Y. State Factory Investigation</td>
<td>$1,587</td>
</tr>
<tr>
<td>N. Y. Board of Estimate</td>
<td>$1,541</td>
</tr>
<tr>
<td>Budget compiled from food allowance</td>
<td>$1,653</td>
</tr>
<tr>
<td>Average</td>
<td>$1,603</td>
</tr>
</tbody>
</table>

These budgets provide for a subsistence only just above a poverty level, and make no provision whatever for com-
fort, health, savings, recreation or amusement. They are not put forward as a standard of what the family of mine workers should be, but to show what it should not be. They do not represent our hopes of the economic status of the mine worker, and we do not think that it is expected that the Commission consider that the earnings of the mine workers should be restricted to an amount sufficient only for meeting annual needs for food, clothing and shelter—an amount which enables the mine worker by the slightest of margins to prevent his wife and children from becoming public charges. As a matter of fact, these estimates of subsistence standards represent what the financial condition of the mine worker and his family is now and what it has been in past years, with the exception that in many mining districts the earnings of the head of the family have not been enough to yield a subsistence for the family, and in order to secure a family income of bare subsistence it has been necessary to supplement the earnings of the heads of families in the mines by having the children go to work, or by taking boarders and lodgers into the home. The mine workers are now on the precarious level of mere subsistence. It is from these deplorable conditions that we wish to escape and we hope and expect that this Commission will grant a living wage to the workers in the illicit mines so that they and their families may rise from the economic darkness and despair which now engulfs them into the economic sunlight. We are wearied with long years and generations of mere existence. We now wish to have a sufficient op-

portunity to earn a wage which will command a decent standard of living and hope for the future.

A Minimum Standard of Health and Reasonable Comfort.

What the mine worker should have, and what the public would insist upon, if it really knew the facts, would be the establishment of such rates of pay and such opportunities for work, as would enable the mine worker to earn a liv-

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Mine No. 3, of the Elm Grove Mining Company, located near Triadelphia, W. Va. This is one of the newer mines of this section.

ing wage. The amount of a living wage, or the amount necessary in manufacturing localities to maintain an average family on the basis of a minimum standard of health, and with a reasonable or small degree of comfort, on the basis of prices in December, 1918, has also been conservatively estimated by the best authorities. The estimates are as follows:

Prof. Ogburn's budget ............... $2,060
1. Total budget .................. 2,262
2. Minus certain possible but improbable economies .................. 2,025

Prof. Ogburn's budget was originally prepared with the aid of the best available data and the assistance of the leading experts of the country in the summer of 1918 for the use of the former National War Labor Board, and for the use of United States Judge Samuel Alschuler in the determination of wages for the employees of the slaughtering and meat packing industry. It has been brought up to date by adding the increase in prices since June, 1918, to the various items of the budget. The budget of the Bureau of Labor Statistics was prepared for the committee on the reclassification of the salaries of federal employees. The budget is based on a most careful calculation of the quantities of the different commodities entering into the consumption of typical families in the District of Columbia.

These are very conservative estimates, however, and understate the amounts absolutely necessary. They are indicative only of what is necessary to secure for the workingman's family a minimum degree of health and some small measure of comfort. The detailed discussions of these budgets both on a mere subsistence and a minimum health and comfort basis, are submitted for the consideration of the Commission in the exhibit to which I have referred.

A Living Wage for Coal Miners.

It was, of course, realized by us that the cost of living as well as the methods of living in bituminous mining areas were different in some respects from those which were characteristic of manufacturing, and other large and small industrial cities. It was for this reason that we invoked the assistance of the United States Bureau of Labor Statistics. We have also through our advisor in economics, Mr. W. J. Lauck, obtained the assistance of Prof. W. F. Ogburn of Columbia University, and have requested him, after studying the data obtained during the past week by Dr. Meeker, as well as the comprehensive information as to prices which we have had our own representatives in the different districts collect and send in to us, to modify his own budget of a living wage, or, in other words, prepare a budget and determine its cost for an average family of a mine worker on the basis of a standard of health and reasonable comfort. This budget and its cost is set forth in detail in the exhibit on Standards of Living which I am submitting, but I wish to discuss it briefly in a summary way for the information of the Commission.

Prof. Ogburn has taken as a basis of his study the bud-

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get recently prepared by the United States Bureau of Labor Statistics for the use of the Reclassification Commission of Congress now engaged in adjusting the salaries of government employees.

This budget aimed to establish the minimum quantity of items necessary for the maintenance of the family of a government employee in Washington at a level of health and decency, and to determine the cost of such items at Washington prices in August, 1913. Prof. Ogburn has sought to adjust the items of the Washington budget to the peculiar needs of the mine workers and the peculiar conditions of mining towns. He has then applied to these items the prices current in certain representative mining communities, as developed in the investigations made during the past week by the United States Bureau of Labor Statistics.

The result of this study is a quantity budget which is believed to represent the barest minimum of health and decency for a mine worker's family. The total cost, at prices now prevailing in the towns covered by the studies of the United States Bureau of Labor Statistics, is $2,243.94.

The main items are as follows:

What the mine workers need, and what the public duty is of the Commission, as we see it, is that irrespective of the increase in living cost the rate of pay of the mine worker should be increased so that he be assured a living wage.

I will say that we have had prepared by Prof. Ogburn of Columbia University, who is considered an authority on the matter of preparing budgets, the following budget for miners in mining localities, which, I believe, is the standard of living which I think should be taken into consideration by this Commission in rendering its final verdict upon this question.

I will say to you that as shown in our exhibit this budget is conservative and demonstrates that a miner's wife, to buy clothing at $100.00, is not in any measure extravagant, and that is true of other items stated in this budget. The method of arriving at this budget, and all its items will be submitted in a prepared statement.

The summary of Prof. Ogburn's budget is as follows (and I will say that this budget is made for the average American family of five):

1. Food ........................................... $801.88
2. Clothing:
   Husband ................................ $146.81
   Wife ........................................ 150.92
   Boy (11 years) ............................ 77.40
   Girl (8 years) ....................... 66.13
   Boy (2 years) ............................ 34.00
3. Housing, fuel and light ................. 45.25
4. Miscellaneous ............................. 266.00
   Total ..................................... 1,278.94
   Aver. saving on garden and chickens 15.00
   Explosives, smithing, etc. ............ 140.00
   Total ..................................... $2,243.94

The standard of living provided for by this budget represents certainly no more than a minimum of human decency. It provides simply those things that a family must have in order to maintain health and preserve its self-respect. It provides for no luxuries and omits many things which are necessities, according to our usual American standards. Most striking of all, it provides for no savings. Surely a man should be expected to have a suffi-

As a consulting electrical engineer Charles M. Means has earned an enviable reputation, particularly in the coal mining industry. He started his career in the coal mines of Western Pennsylvania and has risen to the point where electrical safety appliances for mines and mining, designed and developed by him, have been followed in detail by many of the largest coal companies of the United States.

He is at present technical advisor for the Department of Mines of the State of Pennsylvania and is also retained by the United States Bureau of Mines as consulting electrical engineer, and is a member of a number of Engineering Societies. During the war he was appointed manager of the Inspection Department of the United States Fuel Administration.

He has had wide experience in the safe and economical application of electricity to the production of coal and is recognized authority on safe methods relating to the use of electricity underground. He has been retained by a large number of coal producers and has been identified with many important mine developments throughout the entire country. His headquarters are in Pittsburgh, Room 447, Oliver Building.

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Three besiege, sons of David Thomas, all served in the war. From left to right they are: Edward C., member of the 322nd Regiment, who took part in the Piave drive in Italy; J. L., a signalmaker on the U. S. S. Wyoming; William D., a musician in the 330th Regiment of the 33rd Division. L. J. Thomas served 13 months with the British fleet, and was in the signal tower of the U. S. S. Wyoming at the surrender of the German fleet. He was also in the fleet commanded by Admiral Sims which met President Wilson's convoy coming into foreign waters. J. L. is still with the American fleet, but his brothers have returned to Maynard and are back in the mines.

Sam Pastorec, Pres.
Emery Butts, Sec'y.
Chas. Gavin, Treas.

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1918 over 1916 of $2.19 per ton, or more than four times as much as the increase in labor costs in the central Pennsylvania field during the same period.

As a net result it will be seen that the increased labor costs will account for only 24.7 percent of the increase in the cost of coal to the consumer. With an additional advance of 15 cents for supplies and general expense the total increase in f. o. b. mine cost was 70 cents, or 33 percent of the increased cost to the consumer as compared with 68 percent absorbed by the coal operator, the wholesaler and the retailer.

As more forcibly indicating the constantly diminishing share of labor in the proceeds of the coal industry the division of the dollar paid by the purchaser for coal to the operator, as reported by the Federal Trade Commission is cited in this exhibit. It shows that in the central Pennsylvania field, for example, the distributive share of labor actually decreased from 66 cents in 1916 to 55 cents in 1918, or 18.7 percent, while the distributive share of the operator increased during the same period from 8 cents to 25 cents, or 218.7 percent.

The Relationship Between Labor and Production.

The relationship that exists between labor and production is shown by us also in a series of charts which I am submitting. In these charts are plotted figures chiefly obtained from the reports of the United States Geological Survey from 1899 to 1918 inclusive. An outstanding feature of the bituminous coal industry is the great increase that has taken place recently in the value of the product. For instance, since 1899 the yearly production in tons has increased about 50 percent, while the total value of the product at the mouth of the pit has increased 270 percent. On the other hand, the number of employees has increased only about 6 percent, showing that the average tonnage per employee—in other words his efficiency—has greatly increased in recent years. In fact, the average tonnage per employee increased from an average of 3.19 per day and 769 per year in 1907 to 2.78 per day and 941 per year in 1918.

One reason for the increase in yearly tonnage per employee is the increase in the number of days that the mines have been running. As I have stated before, the operators desire to keep their mines running only as long as necessary to supply their market, or to fill the available car space at their disposal. The fluctuation in the market causes fluctuations in the number of days the mine is worked, and this in turn causes a fluctuation in the number of employees. The changes in the number of employees follow, as a rule, about a year after the changes in the average number of days worked. Thus when the days worked are sharply reduced, the employees remain on the job, hoping for "better times" until they are reduced financially to the point where they quit, even if those better times are actually in prospect. They are, naturally, unable to forecast the future, not possessing intricate, technical information as to the state of the market, and so are forced by their depleted pockets to seek relief in some other industrial field.

When the days worked are increased, on the other hand, the operators are not able to obtain their supply of labor for about a year, partly owing to the natural inertia of the labor market. Thus the widely varying number of days worked operates to the disadvantage of both the employees and the operators, to the former during the period when the fluctuation is upward.

This lag in the labor supply behind the opportunity to work also tends to intensify both the high and the low points in earnings, reducing the low below, and raising the high above what they would be if the industry were conducted at a steady rate with a fairly constant number of days worked each year.

Another series of charts which I am submitting show the relationships between the wage rate and the value of the product and the cost of living.

The wage rate taken as a fair example, is the rate per ton in the Pittsburgh District for hand mining, thin vein, run of mine. This rate is the basic rate in Hocking Valley and in other parts of the General Competitive Field.

Since 1909 the wage rate has increased 49.6 percent while in the same period the value of the product per ton has increased 141.1 percent. This discrepancy between

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STEVES KOVACH.
HERMAN KINDLEBERGER.
WILLIAM PARKER.

Financial Secretary Local Union 1490.

(Local Union 2380)

Kindleberger was among the miners of this section who gave their lives while serving with the A. E. F.

Oldest member Local Union 788, Benwood, W. Va.
The wage rate and the value of the product has existed only since 1916, as before that time the two maintained a very close relationship.

If the wage rate had kept pace with the value of the product since 1916 as it did up to 1916, the rate in 1918 would have been $1.41 per ton, or 61 percent above what it actually was. As the mine workers have made the claim that a 60 percent increase should be granted, on this basis, at least, it would appear that our claim is amply justified.

If it is desired to maintain the same relationship between the wage rate and the cost of living that, as I have already stated, existed in 1914, it would be necessary to raise the present wage rate by 22.5 percent while the cost of living, according to the figures published by the United States Bureau of Labor Statistics, has increased up to December, 1919, 85 percent. If this increase is made, it will bring the wage rate in question up to $1.1358 per ton.

But the last adjustment of the wage rate took place in November, 1917, and has remained unchanged since that time. This adjustment was almost enough, as were the former adjustments that took place between 1914 and October, 1917, to restore the wage rate to the same relationship to cost of living that existed in 1914.

It will be noted, however, that merely raising the wage rate from time to time up to the cost of living does not result in justice to the wage earner because of the hardships imposed by a rising cost of living between the periods of adjustment. If these adjustments are very close together, these hardships are reduced to a low point, but where they are six months or a year or more apart, the wage rate should be in equity raised above the cost of living sufficiently to compensate for inadequacies in the past, or possibly, to cover the estimated increase in the cost of living in the future.

In order to fix the present amount that will compensate the miners for the hardships they have endured in the past, the losses they have suffered during the last twenty-seven months should be pro-rated through the period that the new rate is to be in effect.

The aggregate loss suffered during the twenty-seven months since the last wage adjustment is $4.950 per ton, while the average loss per month is $1.83 per ton.

If a rate is fixed at this time, to be effective for two years starting with January 1st, 1920, the amount lost during the 27 months should be provided through the 24 months during which the new rate is to be in effect. This would add one twenty-fourth of the aggregate loss of $4.950, or $0.206 to the rate per ton necessary to bring the 1917 wage rate up to the December cost of living. Adding $0.206 to $1.1358 brings a total to $1.4018 per ton as a just and equitable rate to be fixed for the ensuing two years for the pick miners of the Pittsburgh district.

It should be noted that the rate of $1.4018 thus obtained as the fair rate for the ensuing two years is essentially the same as the rate of $1.41 per ton necessary to maintain the old relationship with the value of the product, and is practically an increase of 60 percent over the present rate.

Profits from Bituminous Coal Mining Operations, 1914-1919.

It is claimed however by the operators that although their margins of gross profits from production have increased during the years since 1914, overhead and corporate expenses have advanced also, and their net returns on these investments have not advanced as greatly as the gross profits per ton shown by the reports of the Federal Trade Commission. This renders necessary an examination of the net income of bituminous coal mining operations. Such an analysis as was made shows that the operators have been making extraordinary profits during the period of the war, including the period since the armistic and the cessation of actual hostilities. We have collected as far as possible during the limited time at our disposal, all authoritative data relative to the war profits of bituminous coal operators. The results of our inquiries have been compiled in Employees' Exhibit No. —, entitled "Profits from Bituminous Coal Mining Operations, 1914-.

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Staple and Fancy Groceries and Smoked Meats
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S. B. Hickey
Bridgeport, Ohio.

Newspapers Magazines
Cigars Tobacco
The Official Miner's Service Record and History

1919. I am submitting this exhibit to the Commission for its consideration.

During the year 1917, the Treasury Department reported to the Senate certain facts relative to 381 bituminous coal mining companies in the Appalachian mid-continent and western district. This report showed capital stock, capital actually invested, net income, and net income after the deduction of taxes, or the amount actually available to stockholders. All of these companies earned 15 percent or over. The average of return to invested capital shown by the companies as a whole was 52 percent for the year 1917, the companies in the Appalachian district showing a return of 58 percent, those in the Mid-continent area 51 percent, and the Western district 19 percent. After deducting all taxes the 381 companies, as a whole, showed an average rate of return on invested capital of 38 percent, the average net profits for the west being 17 percent, for the middle west 22 percent, and for the Appalachian District, 35 percent. The average rate of return shown by these same companies in 1916 was only 15 percent.

Some of the earnings of these companies ran very high. Ten companies, or 2.6 percent of the total in 1917, after the payment of taxes, earned net returns of more than 1,000 percent, while three companies out of every ten, or 30 percent of the total, showed net earnings ranging between 100 and 1,000 percent. The majority of the companies, or 56 out of every 100, showed net returns ranging between 50 and 100 percent. Sixty-six percent, or more than five-eighths, earned between 40 and 50 percent; almost four-fifths, or 78 percent, earned between 25 and 50 percent, and practically all companies, or 82 percent, showed a net return of between 20 and 25 percent in 1917.

In order to meet any possible claim on the part of the coal companies that the figures published by the Treasury Department represented selected companies with unusual earnings, and also to avoid the further criticism that heavy charges for depletion or depreciation should be made against the Treasury Department figures, we supplemented the report of the Treasury Department by a study of our own. This statement has been prepared from a tabulation of the income figures of thirty-two coal and coke companies, taken from the financial statements of the companies themselves as published in the manuals of Moody & Poor. It also shows a tremendous increase in the earnings of these concerns.

This group of companies was not selected in any sense of the word. It includes every coal and coke company which allows its financial statements to be published by the above named authoritative financial agencies, and, moreover, the majority of these corporations have been

A FAMILY OF FIGHTERS.

In John Reed, a miner employed at the Provident Coal Co. mine at Fairpoint, and his step-father, James, Riley, the sub-district miners boast of two fighters who did a bit more than their share in the war. Both got into the war under the banner of England and served with distinction.

Reed was born in Scotland September 20, 1892, and was killed in action October 1, 1918. He came from a family of warriors. His great-grandfather fought at Waterloo; his grandfather served for 31 years in the Scottish Rifles; an uncle, Marshall Wilson, of Fairpoint, served in the British army during the recent war; a great-uncle served throughout the entire war and five other uncles and cousins were in the war from the start.

John was a member of a machine-gun company, attached to what was known as the "suicide squad," and was mortally wounded while on an expedition with this valiant outfit. He is here shown with his wife in the picture to the left. She was a bride of but a few months when left a widow, the wedding taking place during a leave of absence granted John in May, 1918.

James Riley, whose picture is shown with his family, enlisted in the Canadian Army along with his step-son. At that time he had had considerable experience as a soldier. Back in 1895 he enlisted at Newcastle, England, in the old Northumberland Fusiliers and saw over 16 years' service. He came to America in 1916, as did his step-son. He was employed at Provident No. 2 mine at the time of his enlistment. He was wounded at Ypres and in December, 1918, was sent back to Canada and discharged. The letter from King George, reproduced above, was sent him on this occasion.
pursuing this policy for a great many years, long before the war, so that it could not be said that these are concerns which have become prosperous during the war period and for that reason now publish their accounts.

The figures taken represent the net income available for dividends, after deducting every conceivable charge for depreciation, depletion, amortization, excess profits, income and local taxes, sinking funds, the item of depreciation in many cases being excessive and constituting a considerable proportion of the net worth of the corporation.

That the result of this tabulation is representative of the coal mining industry may be conceded when the source of this information is considered, as well as the fact that the size of the companies included, measured by the capital stock, ranged from a few thousand dollars to nearly seventy millions, and the aggregate total of the invested capital amounts to almost three hundred million dollars and the combined net income in 1917 more than sixty million dollars.

While some of these companies, even in pre-war years, showed a large earning on their original capital stock, and in 1917-1918 made huge profits, in some instances earning more in one year than the entire capital, yet the group, in the aggregate, for the five years 1912 to 1916 inclusive, shows only a fair rate of return on capital, approximately 8 percent. In the year 1917, however, the total net income was more than two and one-half times this percentage of the capital, and in 1918, when the large war taxes as well as governmental control of coal prices served to cut down the earnings, it was still almost twice as great as the average for the five years before this country entered the war.

That this increased earning capacity was not due to increased production is also shown by the figures which these companies issue. The tonnage produced by all of the companies for each year was not found to be available, but it was ascertained for a majority of them, and conclusively shows that a vastly larger profit was taken from each ton of coal during the war period than before.

For the four years, 1912-1915, the average net income available for dividends per ton of coal was less than 21 cents, in no one of these years being more than that amount. For the year 1915 it was more than 26 cents, while in 1917 it was practically 68 cents per ton, nearly three and one-half times the pre-war profit and two and one-half times the rate of earning in 1918. Even in 1918, despite higher wage rates, higher prices for equipment and supplies, government prices on coal and enormous Federal taxes, the net income to these companies per ton of coal was nearly 60 cents, practically two and one-half times the normal profit.

In the light of all these facts it is absurd for the operators to put forth the claim that if the mine workers are paid a living wage the public will suffer a forced advanced cost of coal, and a further increase in the cost of living. While the mine workers, during our great national emergency, were working every day available in order to maintain production, were being paid wages far below their pre-war purchasing power, which I have pointed out was below a level of actual subsistence, and at the same time were sending members of their families to France and straining their inadequate resources to the utmost in the purchase of Liberty Bonds in order to aid our common cause, the coal mining companies were helping to win the war by taking exorbitant profits from the government, our war industries and domestic consumers, and were telling our harassed people, when they protested against the prices of coal, that the high prices were due to the exaction of high wages by the mine workers. Their action has cast a stigma upon the industry and upon the patriotic honor of our people, and we demand that this Commission ascertain and make public the real facts so that the mine workers may be absolved from this most loathsome misrepresentation.

Operators Have Not Absorbed the 14 Percent Advance in Wages.

Moreover, the operators are not now absorbing the 14 percent advance in wages. The order of the Fuel Administration in November, 1919, increasing the miners' wages...
14 percent, with no increase in the selling price of coal, was not complied with in relation to the selling price. Contract coal, which represents 80 percent of output, was advanced correspondingly, and spot coal was advanced by the retail trade, but in many instances not above the increase granted by the mine.

The retail margins are of vital importance to the consumer and are worthy of consideration. The Indianapolis market, which is a fair average for the country, shows the following interesting figures:

<table>
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<tr>
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<tbody>
<tr>
<td>Linton Lump Nos. 5-6</td>
<td>$5.75</td>
<td>$6.00</td>
</tr>
<tr>
<td>Indiana Mine Run</td>
<td>5.00</td>
<td>5.25</td>
</tr>
<tr>
<td>Indiana Slack and Nut</td>
<td>4.75</td>
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</tr>
<tr>
<td>Indiana Egg</td>
<td>5.50</td>
<td>5.75</td>
</tr>
<tr>
<td>Brazil Block</td>
<td>7.00</td>
<td>7.50</td>
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<p>| Mine Freight Retail Retail |</p>
<table>
<thead>
<tr>
<th>Rate</th>
<th>Rate</th>
<th>Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Indiana Mine Run</td>
<td>$2.40</td>
<td>$2.95</td>
</tr>
<tr>
<td>F. O. B. Indianapolis</td>
<td></td>
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</tbody>
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Conclusively showing that the retail prices did rise during that period.

Irregularity in Operation and Employment.

The need of increased rates of pay and the establishment of a living wage having been placed before the Commission for determination, the next question which is fundamentally the most practical and vital before the Commission, for upon a living wage largely depends is the question whether the bituminous coal mine worker shall be given an opportunity to earn a living wage. The increase in the earning power of the mine worker is almost as dependent upon the securing of a greater and more regular opportunity to work or to earn as it is upon an increase in his rates of pay. With inadequate rates of pay in the face of lack of opportunity to work, the position of the mine worker has grown desperate. The Commission should take measures to increase our potential earning power as well as to advance our rates of pay. Our demand for a 6-hour day, 5 days a week, was misrepresented as a movement for a reduction of the daily and weekly working period, when, as a matter of fact, it was a request for an opportunity to work more and to secure a normal increase in the weekly and annual earnings of bituminous mine employees. Under the present management, or lack of proper system of the mines, as well as under the present operating condition, the mine worker is being misrepresented to the public as being responsible for a state of affairs over which he has no control. We are requesting not only an advance in rates of pay but also a greater opportunity to work. We are urging that the potential earning power of the mine worker be increased. If the mine worker can secure more extended and regular employment, they will not be slow to take advantage of it.

We have had prepared and are submitting an exhibit showing the irregularity of the operation of bituminous mines and the causes of such irregularity. It is Exhibit No. 12 and is entitled "Irregularity in the Operation of Bituminous Mines and Causes of Unemployment." We have not at this time entered into an analysis of managerial efficiency in the operation of the mines. Neither have we attempted in this exhibit to set forth any constructive suggestions for the remedy of the present deplorable situation. We have contented ourselves at this time in showing that labor is not responsible for the failure of the mines to operate at their full productive capacity, and that there is no irregularity in the working habits of the miners, as is often claimed, which would account for the failure of the mines to operate a greater number of days each year.

As a matter of fact, our practical experience, as well as the results of recent inquiries, has led us to the conclusion that bituminous coal mining in the United States is practically a part-time industry. The opportunity for labor varies considerably from year to year, but the United States Geological Survey reports show that during a period of 28 years ending with 1918, the percent of possible days worked on the basis of 364 days per year was 71.1 in other words, "lost time" averaged 28.9 percent of the possible working time for labor during the period. The highest percentage of loss—43.7—occurred in 1894 and the lowest—18.1—in 1918. To what extent various causes were re-
The Official Miner's Service Record and History

EDGAR BRINDLEY AND FAMILY.

This photograph was taken in 1912. Brindley is a member of Local Union 1662 and is one of the veterans of the field.

R. D. JUDKINS
Ohio State Registered Optometrist and Jeweler
FINE WATCH REPAIRING
Kodaks and Edison Phonographs
PLUSHING, OHIO.

responsible for lack of continuous employment in earlier years cannot be satisfactorily determined, but fortunately authentic data for this report are available, week by week, from October, 1917, up to the beginning of the strike in November, 1919. This information has been collected from operators and owners, a sufficient proportion of the total bituminous output, to make the results representative of the industry as a whole. Briefly stated, the data referred to show the extent of loss on possible output under existing conditions due to non-operation of the mines, and the degree to which such loss is due to "car shortage," "labor shortage and strikes," "no market," "mine disability," and "all other causes."

Compilation, with accompanying charts, covering the foregoing details week by week are presented as an exhibit and two periods of time are considered, the first extending from the week ending October 6, 1917, to that ending November 1, 1919. The first period covers approximately one year of intense war activity when coal production was stimulated in every possible way, and the second, a year of reconstruction and readjustment following the signing of the armistice.

It is admittedly a common belief, and that belief has been fostered and encouraged to the intended detriment of labor, that the miner himself is largely responsible for the notorious unemployment record or lack of productive efficiency which attached to the bituminous industry. The data referred to, however, clearly show that the responsibility of labor in this report is relatively unimportant compared with other causes, the outstanding facts disclosed by an analysis of the statistics being, briefly stated, as follows:

1. That in a year of intense war activity, as well as during a year of readjustment following the war, there was at all times an inordinate loss of coal production, and a corresponding loss of employment of labor, due to non-operation of bituminous mines.

2. That during the first period, "car shortage" and during the second period "no market" were by far the most important causes of loss of production and the consequent unemployment of labor.

3. That with the exception of a few weeks, largely those in which legal holidays fell, "labor shortage and strikes" were only responsible for a relatively small part of the loss due to non-operation of mines, and that "mine disability," while often exceeding labor shortage and strikes in importance, likewise caused comparatively little loss.

4. That the ability of the industry to meet the largely increased demands of war time, although the normal output was continually restricted through non-operation of mines, and particularly the very great restriction of production because of lack of market during the year following the armistice indicate that anything like the full operation of mines active, with the labor force employed in the industry, would result in production of bituminous coal very far in excess of the demands of the domestic market.

As a matter of fact labor shortage and strikes combined are charged with only 10 per cent of the loss through non-operation of mines in only nine out of a total of 107 weeks. Strikes were responsible in only one of the nine instances, the remaining instances being due largely to observance of legal holidays and the celebration of Liberty Day and Armistice Day.

Compared with his fellow workers in other industries, it is possible that the bituminous miner or worker is somewhat more subject to control of plants through collective "laying off" when pretext for so doing arises. But it does not necessarily follow that the practice of laying off collectively at times results in a permanent loss of earnings, or an ultimate loss of coal output, for in an industry where full time production is never expected because of an inadequate demand for the products, as the facts show clearly the case to be it is in bituminous mining, labor knows that it will be employed only to the extent of meeting the demand. This being the case it makes little or no difference in the aggregate earnings of the miners whether they close a mine by taking a voluntary holiday when it pleases them so to do, or are forced and perhaps unwelcome holiday is certain to come at some other time. In other words, the dislocation of the miner to work at certain times means nothing more than that he knows by experience approximately how many days he will have an opportunity to work dur-
WILLIAM E. EVANS.

William E. Evans has been a miner for 54 years. He was born March 14, 1854, at Penyae, near Ruadon Denbighshire, North Wales, and began his mining career at the age of 12. His first work was pulling coal on a slope to the roadway at the Garthen Collieries. Later he went to work as a trapper at 12 cents per day at the Wyndham, Pa., mine. He then went to the West Side mine as a cooper and was in the mine when an explosion killed 13 men. Holding his cap over his face he walked 600 feet without light to escape from the mine. Shortly afterward another explosion occurred and Evans decided to quit the mine. However, he was required to get another boy for his job before he could quit. He stayed with the new boy the first day to show him the ropes. The next day the third day occurred and the new boy was burned to death. From Wales he went to Lancashire, England, where he became a union man, and after working about England came to America in 1888, going first to Tennessee and then to Pennsylvania, where he went to work in the Tunnel mine. He was a member of the Knights of Labor and a charter member of the United Mine Workers and has held every office in Local Union 2531.

product, it is clearly shown that had available labor been utilized to a reasonable extent during the year following the armistice the output would have been far in excess of the market demands. That this unfortunate condition has long existed in the bituminous industry is a well-known fact. Mr. Francis S. Peabody, who was chairman of the Coal Committee of the National Council of Defense during the war, recently stated to a senate committee that the total cost of production of coal, as well as the earnings of the miner, depend entirely upon continuous work, and that the cost of his mines is affected by irregular operation to the extent of between 50 and 60 cents a ton. Commenting further on existing irregularity of operation, Mr. Peabody makes the remarkable statement that the physical capacity of the mines themselves throughout the United States is sufficient to produce 40 percent more coal than the possible demands of the country. Thus it appears that not only labor, but the consumer and the industry itself, all suffer from the present unfortunate policy of seasonal and otherwise irregular methods of production in the bituminous mines.

Dr. Garfield's Analysis.

The figures upon which Dr. Garfield, former fuel administrator, based his estimates as to the rate of increase in wages (14 percent) which the mine worker should receive were taken from an industrial survey made by the United States Bureau of Labor Statistics in the early months of 1919, in certain mines of Ohio and Pennsylvania. These figures were taken and weighted as follows:

<table>
<thead>
<tr>
<th>Occupation</th>
<th>Number of Wages</th>
<th>Weight</th>
<th>Index</th>
</tr>
</thead>
<tbody>
<tr>
<td>I Machine mining-loaders and cutters</td>
<td>6,878</td>
<td>151.1</td>
<td></td>
</tr>
<tr>
<td>II Hand mining—pick miners</td>
<td>1,872</td>
<td>134.3</td>
<td></td>
</tr>
<tr>
<td>III Tracklayer helpers</td>
<td>440</td>
<td>181.3</td>
<td></td>
</tr>
<tr>
<td>IV Pipe men</td>
<td>110</td>
<td>177.0</td>
<td></td>
</tr>
<tr>
<td>V Trappers (boys)</td>
<td>390</td>
<td>299.3</td>
<td></td>
</tr>
<tr>
<td>VI Tracklayers, cagers, drivers, miners, haulers, bannermen, wiremen, motormen</td>
<td>1,913</td>
<td>177.0</td>
<td></td>
</tr>
</tbody>
</table>

His estimated increase in the cost of living since 1914 in the central coal field was also supplied by the Bureau of Labor Statistics, and was the same as that used by the secretary of labor in his computations, or, in other words, 79.8 percent. Both of these tables are reprinted in the December issue of the Monthly Labor Review of the Bureau of Labor Statistics, page 76.

JAMES HENNESSY.

The memory of Jim Hennessy will ever be green in the minds of the miners of Sub-district Five. From the day he came to the United States from Canada in 1880, until his death in 1918, he worked constantly for the improvement of mine workers' conditions. He came from Nova Scotia to Louisville, Ky., carrying a traveling card from the General Assembly of North America, Local 1463 of the N. & H. O. He moved to Bridgeport, O., in 1886, and to Burton in 1893, carrying a traveling card from the Bridgeport Knights of Labor. He was a tower of strength among the mine workers and did much to promote their organization. In 1898 he was appointed a member of the Ohio Mine Commission by Governor Harrigan. This commission revised the Ohio mining laws. Under Governor Harmon's administration he was appointed, in 1910, mine inspector for the Eleventh Ohio district, composed of parts of Belmont, Harrison and Jefferson counties. He has the reputation of having always striven to protect the lives and health of the workers in the mines of his jurisdiction. He retained this position until 1915, when he resigned because of ill health. His health continued to decline and he died on December 23, 1915. His remains lie in Linwood cemetery, overlooking the valley of his labors. Mr. Hennessy had been a member of Local Union 2465 and retained a card in that local until his death.
supply was that produced at the highest cost. As a consequence, the price of coal was determined by the cost of production in the highest coal mine, and not on the basis of an average for the industry.

On the contrary, however, in attempting to adjust the wages of the mine workers, he worked out an average increase of the most fortunate and the least fortunate, in the way of previous increases in rates of pay, and on the basis of this general average stated that the mine workers as a whole should receive a 14 percent increase. This meant, of course, that the mine worker who, before the war, had been paid the minimum wage and who, in order to be placed on a competitive basis with other industries during the war, had received a relatively large increase in rates of pay, under Dr. Garfield's analysis would receive nothing. The absurdity of this is shown in the case of trapper boys, who, being very poorly paid at the beginning of the war, had received an increase of 100 percent and under Dr. Garfield's ruling would have to return 22 percent of their wages, received during the war, in order that the general "jack-pot" might be equitably divided.

This is in sharp contrast with his policy in fixing prices. If the method advocated for the miners had been applied to the mine operators, the procedure during the war would have been for Dr. Garfield to have figured out an average profit for the industry and then required all operators who received more than that average to turn this excess over to the operators who were receiving less than the average, so that the general average for the industry might be maintained.

Dr. Garfield's method was absolutely impracticable. The impossibility of the mine workers distributing a 14 percent increase, weighted according to relative occupational increases, among their members is as absurd as it would have been impossible for the low cost operators to have distributed, equitably, their excess profits over a certain fixed rate of return to the high cost operators.

The only plan under which Dr. Garfield's method would have been put into effect would have been for all the wages paid to mine workers in the United States to have been pooled in one large fund each month, and then for each to have participated in this general wage fund according to Dr. Garfield's computation. When it is considered that this wage fund would have had to be consolidated from 1913 to date, and would have been complicated with the mortality among miners from accidental death and other causes since that time, as well as the withdrawal of men to enter the military service, the utter lack of feasibility of Dr. Garfield's equitable distribution is evident.

2. Dr. Garfield's method was contrary to all past usage and precedent in the bituminous coal mining industry. In industrial life certain practices have been developed and become crystallized just as strongly as our legal system or social conventionalities in civil life. For generations the practice has been to accept the rate of pay in all other occupations in the bituminous coal mining industry.

Under these conditions we were forced to reject Dr. Garfield's preposition, not only as being absolutely unfair as a whole, but grossly inequitable as related to the different occupations, completely at variance with his theory of fixing prices, and last but by no means least important, because it was absolutely impossible of practical application.

Increases in Compensation to Mine Workers as Compared With Wage Increases in Other Industries During the War.

There has been much discussion and controversy as to the increase in compensation received by mine workers during the war as contrasted with other industrial workers. Statements have been freely made by operators and other classes of persons that the mine workers have secured greater advances than other wage earners. We have had an exhibit prepared to show the fallacy of this claim.
 increase over rates in 1914, and over 40 percent have received increases aggregating less than 50 percent.

IRON AND STEEL INDUSTRY. Ninety-nine percent of the iron and steel occupations have received increases aggregating over this 75 percent and about four-fifths, or 80 percent of the occupations, have received increases over 1914 rates aggregating more than 125 percent.

RAILROADS. Over 75 percent of the railway occupations (computed on an hourly basis) have received increases aggregating more than 75 percent. More than half of the railway occupations have received increases above 100 percent.

NEW YORK STATE MANUFACTURING. Only one branch of New York State industries reporting to the State Industrial Commission show increases aggregating less than 75 percent specified. This is the printing and paper goods industry, with an increase of 70 percent. Ten industries show increases over 75 percent, five over 100 percent and the average for all industries is 105 percent.

MANUFACTURING INDUSTRY INVESTIGATED BY INDUSTRIAL CONFERENCE BOARD. THE FEDERATED AGENCY OF THE VARIOUS MANUFACTURING ASSOCIATIONS IN THE UNITED STATES. Only one of the eight industries upon which this board has recently reported shows increases for male labor aggregating less than 75 percent of the remaining seven, five industries show increases for male labor aggregating over 100 percent since September, 1914. The metal trades alone show less than 75 percent, the figure for male hourly rates being 75.7 percent. Taking the separate industries, we find:

METAL TRADES. Eight of the thirteen occupational groups show increases aggregating over 75 percent. Of the remaining five the lowest increase is 66.9 percent.

COTTON INDUSTRY. All occupations (ten in all) show increases for male labor aggregating over 75 percent and seven of these show increases over 100 percent. All occupations show increases for female labor over 75 percent; six of these are over 100 percent. The total increase for this industry is 105 percent.

WOOL INDUSTRY. All occupations (ten in all) show increases for male labor aggregating over 75 percent; and all but one of the nine female groups show the same. Seven of the male groups and a like number of the female show increases since September, 1914, of over 100 percent. For the industry the totals are, male labor 88 percent; female labor 56 percent.

SILK INDUSTRY. Nine out of eleven groups of workers considered show increases aggregating over 75 percent; four of these show increases of over 100 percent.

PAPER INDUSTRY. Five out of six occupational groups show increases for male labor since 1914, aggregating over 75 percent; the total average increase was 88.3.

R. L. WRIGHT CO.
Jobbers in
HAY, GRAIN AND MILL FEED
Bell Phone, 11a-A.
BRIDGEPORT, OHIO.

The Bellaire Enamel Co.
Manufacturers of
HIGH-GRADE ENAMEL WARE
18th to 19th Streets
BELLAIRE, OHIO.
percent. For female labor the total average increase was 67.8 percent.

BOOT AND SHOE INDUSTRY. Ten out of thirteen groups of male labor show increases since September, 1914, aggregating over 75 percent, the lowest increase being 62.7 percent. Three groups of female labor are given, the percentages being 71, 79 and 56. The total average increase for male labor is 84 percent.

Shipyards.

ATLANTIC COAST. No occupations show increases under 75 percent and no occupations show increases under 100 percent; thirty-two out of thirty-three show increases over 100 percent; of these twenty-seven show increases over 150 percent and fourteen over 200 percent.

PACIFIC COAST. The bulk of the occupations, thirteen out of fifteen, show increases aggregating between 50 percent and 75 percent. Five groups show increases over 75 percent.

NAVY YARDS. Taking the navy yards as a whole, nine occupational groups show increases aggregating between 50 and 75 percent and six groups show increases over 75 percent.

U. S. ARSENALS. Only four out of sixteen occupations show aggregate increases for the period since 1914 under 75 percent. Over two-thirds of the occupations have received between 75 and 100 percent.

FARM LABOR. In thirty-eight states farm labor has received since 1914 increases aggregating over 75 percent. The average increases for farm labor for the entire country is 88.4 per cent.

NEW YORK GARMENT TRADES. All comparable occupations of the men's garment trades of New York City have received increases aggregating over 125 percent since 1914. This contrasts with the ladies' garment trades where advances since 1914 appear to have totaled 50 percent, but seven of sixteen occupations. But latest figures are not available and this covers only the skirt and waist shops.

LONGSHOREMEN. Taking the country as a whole, nine cities show aggregate increases for longshoremen over 75 percent, and only five under that figure. The average increase for the entire Atlantic Coast is 122 percent.

STREET RAILWAYS. Data for street railways is not up to date, nor is it on hand for all cities. Such material as is at hand shows cities about evenly balanced on either side of 75 percent increase—fifty-nine cities having given over 75 percent and fifty-five under that figure.

BUILDING TRADES. Data for the building trades is also incomplete. That which is at hand shows four occupations with more than 50 percent.

In general then it appears that a rough approximation to a fair increase for industrial occupations since 1914 would fall somewhere between 75 and 100 percent, which is considerably greater than the advances in rates of pay which have been received by the anthracite coal miners. Instead of receiving larger, the mine workers have received smaller advances in compensation during the war period than other industrial workers. These facts may be verified by reference to the detailed exhibit which I am presenting.

Punitive Overtime.

We wish also to request the Commission in its award to provide for something strict adherence to the standard workday by requiring them to pay punitive overtime at the rate of time and one-half for all time worked in excess of the standard workday. There has been a remarkable extension of the policy of punitive overtime as a means of guaranteeing its observance. We have had prepared an exhibit showing the wide acceptance of punitive overtime during the war period which I am now submitting to the Commission. It is marked "Employees' Exhibit No. 8," and is entitled "Practices Regarding the Payment of Punitive Overtime."

The question of whether a man works overtime or not depends entirely upon whether the mine manager or fore-
from 17.5 percent to 12.5 percent; and the proportion of eight-hour men increased from 60 to 70 percent. According to the latest available returns of the United States Geological Survey the number of bituminous mine workers working each specified number of hours each day in 1917 was as follows:

<table>
<thead>
<tr>
<th>Hours</th>
<th>Mines</th>
<th>Men</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ten-hour</td>
<td>458</td>
<td>45,788</td>
</tr>
<tr>
<td>Nine-hour</td>
<td>688</td>
<td>68,852</td>
</tr>
<tr>
<td>Eight-hour</td>
<td>2,362</td>
<td>232,096</td>
</tr>
<tr>
<td>All others</td>
<td>58,644</td>
<td></td>
</tr>
</tbody>
</table>

This change was especially noteworthy for the reason that at the same time an increased production was demanded from the miners because of the extraordinary development of war industries, in the face of the fact that 80,000 were almost simultaneously called to the colors, and another 35,000 left the mines to accept employment in munition and other war plants. As against this reduction in hours worked per day and a sudden and drastic curtailing of the regular time for earning an enormous increase in output was secured, affording an exceedingly significant demonstration of the relation between greater productivity and a shorter workday. Greater productive efficiency as well as a large measure of physical and mental well-being to the workers would be secured by a further extension of the eight-hour day, and the adoption of punitive overtime payments so as to secure adherence to the eight-hour principle.

Present Day Practice Respecting Punitive Overtime.

Our demand for punitive overtime is supported by widely prevailing practice. It is a practice current in practically all the organized trades of the country, as the building trades, metal trades, laundry workers, granite and stone trades, bakery trades, cigarmakers, stationary firemen, glass workers, hatters, papermakers, photo engravers, printers and printing pressmen.

Punitive overtime is almost universal in the basic industries of the country except in coal mines. (Even the coal miner in Germany gets double time for Sunday work and time and a quarter for week day overtime).

In this country in the men's clothing industry in the four principal centers, namely New York, where 80,000 are employed, in Chicago, with 35,000, and in Rochester and Baltimore, punitive overtime is paid.

The shipyards of the country, with approximately 200,000 employees, have adopted the practice. Even the railroad freight service accepted the practice effective in December last and practically all railroad employees, or approximately 2,000,000 wage earners, now operate under this rule. In the newspaper printing industries, so far as 25,000 or more employees are concerned, and the lumber industry of the Pacific Coast, with 50,000 employees, pay punitive overtime as a result of wartime experience.

The packing house industry, in which are employed 100,000 wage earners, was required to pay its employees time and a quarter for all work over eight hours, and time and a half for hours in excess of ten hours per day. Judge Albee, in making the awards in May, 1918, declared that the employer was not justified in requiring employees to work unnecessarily; but if such work is necessary, it serves also to compensate the employer for the added sacrifice he makes in working at a premium at which he should have his liberty.

While punitive overtime is not paid in the steel industry as a whole, it is observed in the steel mills of the Colorado Fuel & Iron Company of Pueblo, Colo. In the case of the U.S. Steel Corporation, the basic eight-hour day was recently put in force and the men were paid for eight hours' work as much as they had previously been paid for eleven hours, and additional compensation was paid pro rata for the remaining three hours of the day as the men are still required to work eleven hours during the day shift and thirteen hours during the night shift. So that punitive overtime is really being paid there as a matter of practice.

One of the most remarkable instances of the application of punitive overtime is that found in the Merchant Marine, presumably one of the last occupations where it would be practised, where 70,000 employees in the service have regularly been paid overtime as a result of long standing trades union practices, and with the confirmation and approval of the United States Shipping Board.

The practice in the Merchant Marine affects all classes of employees, seamen, licensed officers, engineers, and galley and mess room employees.

The Merchant Marine Service of Norway, Sweden and Italy may be instanced as examples of the practices in foreign countries.

In the street railway service of this country, the payment of punitive overtime is gaining ground. It is observed in Boston and practically all of the cities of Massachusetts. The new agreements in New York and Chicago provide for it. It is prevalent in Newark and Patterson, New Jersey and in other cities in that state. Detroit and Cleveland observe the rule. The practice is to pay from time and a quarter to time and a half.

Overtime Building of National War Labor Board.

The decisions of the National War Labor Board respecting the payment of overtime are being uniformly adopted. They fixed time and a half for all overtime, with double time for work on Sundays or holidays. The board also awarded double time for work on Saturday afternoons and for some work late at night by those who were not night shift men. In no case the joint chairman awarded time and a quarter for work between eight and ten hours, and time and a half for work over ten hours, while in no case they awarded time and a half and double time for the same work respectively.

Overtime by Law.

State legislation in Oregon provides for punitive overtime for work done in excess of ten hours, limiting such work to emergency work. In the case of work by the state, county and other governmental divisions, punitive overtime is effective after eight hours of work per day.

George Bucey and Family.

Mr. Bucey is the "live wire" recording-secretary of Local Union 1929.
Overtime Under Minimum Wage Legislation.

The general practice under the minimum wage legislation, which as a rule affects women and children only, is to discourage and limit overtime as much as possible. When overtime is necessary, compensation is required somewhat in excess of the normal rate of compensation.

Overtime in Foreign Labor Legislation.

Either by law or administrative order, punitive overtime is required to be paid to those persons coming within the scope of the general eight-hour laws in the following countries: Finland, France, Ecuador, Austria, and Portugal. The eight-hour bill, now before parliament in Great Britain, specifies not less than time and a quarter as the punitive overtime.

The international labor conference at its recent meeting in Washington, when it recommended the adoption of a general eight-hour day by the countries which are members of the International Labor Organization, also recommended the payment of time and a quarter for all overtime work.

In the voluntary agreements and in the binding awards of the arbitration courts of wage boards of Australia and New Zealand, all overtime in excess of eight hours per day, or 40 hours per week, must be paid for at a higher rate of remuneration.

With these object lessons before the Commission and especially in the light of the unusual health and accident hazards of the bituminous coal mine workers, it seems clear that the Commission should further strengthen the standard workday in the operation of the coal mines, or whatever standard workday is awarded, by requiring the operators to pay time and one-half for all time worked in excess of eight hours.

The Occupational Hazard of Bituminous Coal Miners.

A great deal has been written and a large number of investigations have been made as to the occupational hazard, both in the form of accident and health, of the bituminous coal miner. They all point to the same conclusion, that the hazards of the miner are greater than those of any other important industrial occupation.

We have had an exhibit prepared in this connection which shows exhaustively, when the limited time for its preparation is taken into consideration, the results of studies and investigations made from official and other authoritative sources such as the records of the large industrial insurance companies. This exhibit is Employees' Exhibit entitled "The Occupational Hazard of Bituminous Coal Miners." I shall briefly recapitulate for the Commission what it shows, as follows:

1. Bulletin 157, of the United States Bureau of Labor Statistics, prepared under the direction of the eminent industrial authority, Dr. P. L. Hoffman, states that "probably no industry is so subject to exceptional hazards as coal mining." The importance of this great occupational hazard is so clearly recognized that the Federal Government has created a special national office—the Bureau of Mines—to deal with it.

2. Investigations by and the experience of the leading industrial insurance companies show that the bituminous coal mines have a death or mortality rate of 32 percent above the average for all other industrial occupations. The average age of bituminous mine workers at death is only 43.3 years as compared with an average life, for example, of 58.5 years for farm laborers.

3. The leading cause of death are respiratory diseases and industrial accidents.

4. In the influenza epidemic of 1918, bituminous miners died at four times the rate of mortality in all other industrial occupations.

5. The death rate of Illinois bituminous miners increased each year from 1912 to 1918. Of the deaths of Illinois miners, 35.8 percent each year of all males at work in the United States Coal Registration Area, the percent was only 10.6. Among the Illinois miners, the deaths from tuberculosis, pneumonia and cerebrospinal diseases also increased during the period 1912-1918.

6. Representative life insurance companies will accept miners only, if they pay rates of risks 16 years above the actual, and then will permit them to have cheaper form of low disability; only one other occupation is subjected to more drastic conditions.

7. The coal mining industry, and especially bituminous, is especially subject to great catastrophes. Since 1900, there have been at least 12 mining accidents, in each of which one hundred or more miners workers were killed.

8. The injuries not resulting fatally, most frequently cause disability to the lower extremities, and thus prevent resumption of occupation upon recovery.

9. The causes of accidents are so numerous and varied, that their prevention in some cases is a matter of great difficulty.

10. The mortality experience of the Illinois department of the Metropolitan Life Insurance Company for the years 1911-13, showed out of each 100 coal mine workers, between the ages of 15 and 24 years, who died, 63 died a violent death from accident or the result of accident in coal mines; of each 100 coal miners between the ages of 25 and 34 years who died, 44 died an accidental death, while out of each 100 between the ages of 35 and 44 years, 31 died from accidents.

At present, I say to you that no other industry in America, whether it be working at desks under artificial light or otherwise, can show any such death rate as the mining industry shows.

These are some of the main points developed by our study of the health hazards of the occupation of the bituminous miner, which prove that, with the probable exception of the manufacture of explosives, the other trade mentioned by the life insurance companies, it is the most hazardous of all industrial occupations. We ask the Commission to consider these facts in the detailed exhibit which we are submitting and to give them due weight in their final award.

In other words, Mr. Chairman, the cost of dying is another end of this question, so far as the miner is concerned, as well as the relative high cost of living.

Present Rates of Pay Are Not Adequate Even Under Regular Working Conditions to Yield a Living Wage.

Mr. Francis S. Peabody, of Chicago, one of the largest coal operators in the country, who was chairman of the Committee on Coal Production of the Council of National Defense, in his testimony before the sub-committee of the Senate Committee on Interstate Commerce that investigated the increased price of coal (see page 251 of the official record of the hearings), emphasized in the strongest possible language the vital importance of regularity and continuity of employment of the coal miner. He said:

"The earnings of the laborer and the cost of coal depend entirely upon continuous work. Our costs will vary from month to month, dependent upon the running time of our mines. There will be a variation of between 50 and 60 cents a ton from month to month, depending on the number of hours the mines are run. So it is true of the miners' wages. Today the ages being paid the union miners of the United States for a ton of coal produced.
are amply adequate to supply all their necessities. That is, provided they are given five days' work during the week and four days in the month. The wages paid the miners are entirely inadequate if they are only going to get one or two or three days a week for four weeks in the month. The cost of coal, the earnings of the man himself, depends on continuous work. I believe today there is ample labor supply in the mining industry to produce all the coal that is necessary to meet the needs of the States, provided all demands over the whole of the working time are given to these men. Mr. Peabody's statement, as to the vital bearings of the irregularity of the operation of the mines upon the interests of the miners and the consumer of coal, which the Commission will have to solve. Mr. Peabody means by the phrase "amply adequate to supply all their necessities" the bare physical subsistence needs of the miner and his family. Present rates of pay, even if the mines operated each day, are not sufficient to pay a living wage. This is continuously shown by the figures of the Bureau of Labor Statistics, which were collected in 1915. Reduced to an annual basis these figures showed that in 1915 in the United States as a whole hand miners were only earning $1,331, machine miners $1,621, and loaders $1,212.

That a living wage for unskilled workers should be 233% higher. The inability of the mine workers at the present rates of pay to earn this amount is a strong argument in favor of the employees. This statement is true in every case. The average annual earnings of a mine worker in 1915 would be only $1,961 and of hand miners and loaders $1,617.

The highest paid man working in the coal mines of America is making $600 less than the lowest estimate that is made for a miner to live.

Under these more reasonable and substantially impossible conditions, the hours of all miners and loaders would not earn a subsistence standard of living for their families, a bare subsistence standard for their families, a bare subsistence standard for their families, a bare subsistence standard for their families. The whole miner would be somewhat above the subsistence level but far below a standard of health and reasonable comfort.

I, Mr. Chairman, that we feel that the operators, in presenting their data on this subject, while on the question of profits, they will probably attempt to show the Commission that some coal companies have operated in coal and have not made any profits. These same gentlemen will contend that the men who made the highest wages in the coal mining industry should be the basis for your computation of a wage advance, and would not take the average wage of all the men who work in the mines.

The Six Hour Day in England.

The six hour-a-day—there has been much said about the six hour day. I may say by way of explanation that Mr. Hoover, United States food administrator, and Mr. Hoover is considered a man of an upright American—he is not an un-American man—managed the mines in Northumberland for many years, where they worked six hours a day. And in an interview he stated that it would be impossible for him to come before it—that he would not say this in an American way.

He also, to direct the attention of the Commission to the official reports from one of the most important and oldest mining districts in England, where tens of thousands of miners have been working under agreements limiting their work at the face to less than six hours a day. These facts are embodied in our exhibit entitled "The Six Hour Day in England."

For description of the working of the short day in the mines of the Durham Coal Owners' Association before the British Coal Industry Commission (1899) and for the statistics showing its economy, the appendices to the report of this commission will prove ample. The report of this commission will prove ample. The report of this commission will prove ample.
than miners in other parts of England who are working under the so-called Eight Hours Act.

Table 1, of our exhibit in this connection, shows that the cost of mining a ton of coal in the United Kingdom varies in the various districts between 14s 9d and 20s 11d, and that the cost in Durham, Northumberland and Cumberland stands between these limits, at 16s 7d, being pretty close to the average.

Table 2 shows that the average tonnage of coal raised per hundred shifts actually worked during the years 1897-1919, has been higher in Durham and Northumberland than the average for England and Wales, and higher than the average for the entire United Kingdom. In only two of the seven periods given have Durham and Northumberland been slightly under the average for England and Wales, and this despite the fact that the Durham and Northumberland miners are working the short working day.

Table 3 also shows how little alteration in the rate of production occurred around 1891 when the shorter working day went into effect. Also the slight effect upon the production in the rest of England when the eight-hour bill went into effect in 1901-1910.

Table 4 sets forth the percentage of absenteeism in the various coal districts, and shows a distinctly lower percentage for all causes in Durham and Northumberland than in the rest of the country. The table was prepared by the Statistical Department of the Board of Trade.

Company Housing in the Bituminous Coal Region.

I wish also to direct the attention of the Commission to the subject of company houses in mining communities and their significant bearing upon the conditions which surround the bituminous miner worker.

From the exhibit we submit Employees’ Exhibit No. 60, concerning company housing by the operators in the bituminous coal region, an exhibit which is based upon a report of a field investigation of the United States Bureau of Labor Statistics, we feel justified in drawing the following conclusions:

1. Bituminous coal miners who are accommodated in company houses are compelled to live in isolated, desolate communities, removed from communities of any considerable size. The streets of these towns are as a rule unpaved, very frequently unlighted, and without sidewalks. The streets are laid out rectangulally. The community as a whole is quite uninteresting by reason of lack of vegetation. Particularly in the coke region of Pennsylvania all vegetation is burnt barren by the smoke of the bee-hive oven.

2. The houses are of a dull uniform architecture, usually double frame houses, and all those in any one community are usually painted one color. Being frame houses as a rule they are quite likely to be in poor repair. The

same style of house still persists which was found in the company towns in the early sixties and seventies. Most of the present houses—about three-fifths—were erected between the years 1900 and 1919.

3. The interior of the houses is of low grade. The plastered and papered house is only built for foremen and superintendents. The miner’s house is hardboarded up inside. It is heated only by a stove or open grate, and an open grate is manifestly inadequate if only as far north as Pennsylvania.

4. The houses are small and very much below the standard housing which was provided during the war by the United States Housing Corporation and the United States Shipping Board. The prevailing size of dwelling for a family in the Pennsylvania and West Virginia bituminous regions is either three or four rooms; and Kentucky, three or four rooms; and in the coal towns of Colorado and Wyoming, four rooms. On the other hand it may be observed that in the anthracite coal region the typical mining company house is of five or six rooms. The standard fixed by the United States Housing Corporation is a six-room house.

5. The miner’s company house almost without exception has none of the sanitary conveniences which have become accepted as part of the modern workmen’s standard house. For instance, 68 percent of the houses in the various coal regions are without inside toilets. Over one-half have no modern conveniences whatever, not even so much as running water or electric lights. Less than two-tenths (1.8 percent) have modern bathrooms in them; such houses as do are those of the foremen and higher class of salaried employees in the community—superintendents and the like.

In no other industries where company housing is practiced is the lack of modern sanitary conveniences so prevalent.

6. Company housing gives to the operator an unusual amount of control over the movements of his workers. The company town is a closed community. It is the private property of the operator, who in case of strike may keep off the streets of his community all outside communication with his men.

The report of the Bureau makes the following statement:

“A housed labor supply is a controlled labor supply. Employers are in a position carefully to select their tenants from among their desirable employees as there is always a dearth of houses and a long waiting list of applications. This control of the labor situation by the employer through the company house is most conspicuously brought out in the brevity of the notice to vacate contained in the rental lease which the employer signs, as also by the general practice of using no written lease.
Many leases contain the stipulation that the tenancy of the house is for the period of employment only. Under such circumstances it has been held by a federal court that no notice to vacate the premises is necessary. On the whole, therefore, both formal leases and the informal lettings show that the landlord and tenant relation of the employer and the employee can be severed upon short notice or upon no notice at all; it is quite informal.

7. The extent of this control is far-reaching in the mining town. It is shown by the investigation of the Bureau of Labor Statistics that the soft coal operators who house their employees accommodate over three-fifths of their employees in company houses; in Colorado and Wyoming, over two-thirds; and in the Alabama region, four-fifths. In no other part of the country where company housing is practiced, except in the southern cotton mill towns, is the extent of this control through housing so far-reaching as in the bituminous coal industry.

Pay Roll Requested on a Uniform Basis.

As already stated it has only been possible for us to secure information as to annual earnings from scattered official sources. Accurate data in this connection, however, is absolutely essential to the Commission if it is to reach a just conclusion as to the proper rates of pay to bituminous mine workers because of the irregularity of work in different districts and the consequent fluctuation of the earning power of the worker from causes over which he has no control. Basing our judgment on our past experience we apprehend that the operators will submit pay roll data for exceptional employees who had an opportunity to work full time or who worked under other favorable conditions, with the purpose in mind of creating the impression that mine workers as a whole receive large annual earnings. In order to eliminate this possibility and in order that the Commission may have a true picture of the economic status of the mine worker, we respectfully request and urge that the operators be required to furnish the Commission with transcriptions of their pay rolls from representative mines in each district, setting forth on a uniform basis by leading occupations the following facts relative to employees who were available for employment by years, that is, whose names appeared on the pay roll during each month of the calendar year 1914, 1917, 1918, 1919:

- Name of mine
- Days in operation
- Length of workday
- Occupation
- Days worked
- Hours worked
- Total earnings

If this method be adopted by the Commission, or some better method on the recommendation of the Commission's staff of statisticians, the danger of having placed before it incomplete or abnormal cases will be avoided, and representative and authoritative data on a uniform basis will be available for the information and use of the Commission.

Clinton, Ind., Miners Plan Erection of a Hospital.

A miners' hospital movement is under way in Clinton, Ind., which, if successful, will give that city a modern, fully equipped hospital.

The plan outlined would not bring the money from taxation nor rest the support of the hospital in any way upon the property of the county. The hospital, which is estimated to cost $75,000, will be controlled and maintained by a board of directors appointed by the various locals of the United Mine Workers of America in this field.

H. E. Thomas is the chairman and Robert Salmon is the secretary of the committee, which was appointed at a mass meeting of the miners a short time ago to investigate and report on the plan.—United Mine Workers' Journal.