

GAS AND ELECTRIC NEWS

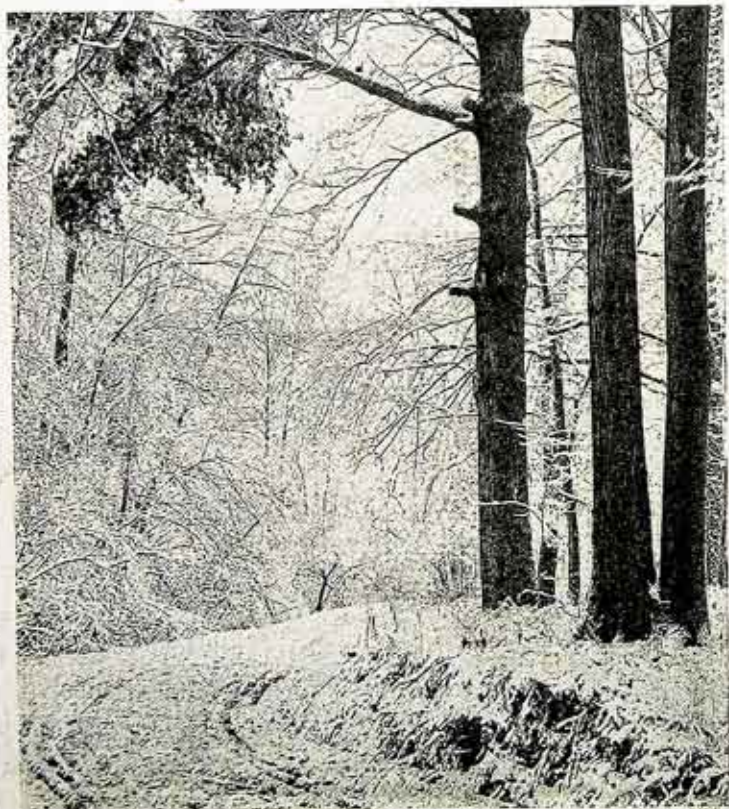
PUBLISHED BY

THE ROCHESTER GAS & ELECTRIC CORPORATION

VOL. 7

DECEMBER, 1919

No. 6



Winter-Grandeur in the Woods

Photo by Graves

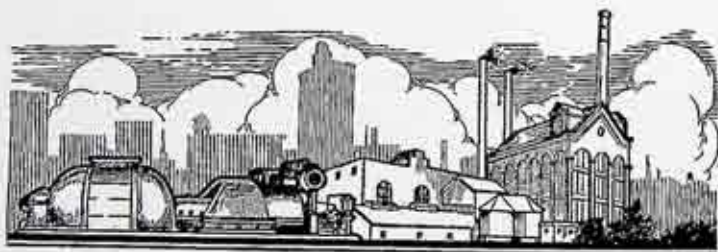
Blow, bugles of battle, the marches of
peace;

East, west, north and south let the long
quarrel cease;

Sing the song of great joy that the angels'
began,

Sing of glory to God and of good-will
to man!

Whittier.



GAS AND ELECTRIC NEWS

Vol. 7

DECEMBER, 1920

No. 6

Today's Economic Problems

DR. CHARLES A. EATON

From a lecture delivered to the Employees of the
Rochester Gas and Electric Corporation.

THE subject which was assigned to me for tonight is a difficult one and one that is crammed with importance to every man and woman in this room, city and country. I am going to speak in as popular and interesting a way as I can so that we will each indeed grasp that which will help us in our work and our duty to our country. First of all perhaps you would like to have me tell you who I am, so that you will know who is talking to you. I don't want to talk about myself but we will come to a better understanding if we are acquainted.

I was born in the back woods but I was born with an ambition to make something of myself and, believe me, there was nobody going to lie awake nights if I did not do it myself. My father lost his fortune when I was but eight years of age. My dear mother and I, when I was ten years old, moved out of the beautiful home into an attic and mother drew chalk lines on the floor to mark out the different rooms. I almost had a brain storm trying to keep in the right room at the right time. My mother died a few years ago, an old lady and in all the vicissitudes of her life I never heard her complain or saw her discouraged and she always believed that her child, the youngest of eleven, was going to make something of himself. I started out with nothing. I worked for two years shoveling mud

at \$1.20 per day, and believe me it was hard work, but I worked my way through nine years of school and college.

I have come to give you a lecture and I know what you are up against in your life and I am firmly of the conviction that there is a better chance today in America for the boy or girl who has the stuff in them to succeed than in my time.

When I think of the delicate nurture of the children today in schools, it is incredible to me that all boys and girls are not the most brilliant students in the world with a complete mastery of all the sciences. So I say tonight to you boys and girls that you are facing golden opportunities in this wonderful land.

During the war we were in great extremities. We were fighting a war 3,000 miles across the sea and we could not get ships. Those men who were accustomed to getting \$25 a week before the war and could now get \$25 for two days would only work two days. They lacked the ambition to work, so that the cost of production was piling up and the ships were not being built.

My opinion was that these men in the ship yards were not working because they did not know that our country was at war. They did not know that they were just as responsible for the success of this war, as those who were wearing khaki. I outlined

this proposition and the head of the Emergency Fleet got up and commanded me. During that time I addressed over a million working men in the ship yards and industrial plants of this country and I came back more profoundly convinced as to the firm foundation of democracy than ever before.

At the Fall River ship yard in Quincy they were having serious times. I spoke to their men. When I was going out a husky guy stood at the foot of the stairs and squared off as if to hit me. He walked up to me and said: "Who do you think you are looking at?" "I am looking at a very fine, splendid New England worker." "Nothing of the kind, you are looking at the plain, ordinary garden variety of damn fool." It was interesting to find a man who would own up to it. He began to cry and said: "I have two boys. They are all I have in the world. They enlisted in the Canadian Army and are in the trenches in France this minute. I was drunk three days last week and those three days, if what you say is true, may detain that ship from taking over the very things that would save the lives of my boys. You watch your Uncle Dudley from now on." He went to work and they told me afterwards that he worked like a man possessed. Friends, the proof of the pudding is in the eating. The changed attitude of that man who suddenly saw and began to know, was reflected throughout the length and breadth of this land and I have seen over and over the production in the ship yards leap up from 30, 40 to 100 per cent.

Now I have come to you tonight out of that experience, at the most critical and difficult time that has confronted this nation since the Civil war, and friends, it is up to you and you cannot side-track it nor can I. Every young man of military age in this country was called to the colors when the war was on but today every

man and every woman who is well and strong enough to think and work is called to the colors, for our country needs us today more than it did when it was at war. We are having more difficult times and those who see the furthest see that we are going to have stormy weather in America until we settle some very fundamental things. This is the situation not only in America but throughout the civilized world. The prices of commodities, of food, clothing, rent and all that you have, are higher probably than they have been since the Civil War, if not in the history of the world. Wages in certain classes of labor are higher than ever and wages go up, then prices go up, and we spiral our way up and up until some day we will step off into a fog bank and come down with a bang. With the increase of wages and increase of prices there has been a marked falling off in the production of labor. A gentleman told me tonight that in one great industrial plant in a nearby community, 400 men were formerly employed. Today they are employing 600 men and are not turning out as much stuff as when they had 400 and they are paying them two and three times as much as before the war.

I have just returned from France, Belgium and England. In France I was told that that day (in August) there were 60,000 freight cars on the railroads in France loaded with freight. They could not move them with the same number of employees as before the war because the men could not work and when you realize what France went through for all those years, you can understand that their men were tired, shot to pieces and had not the physical or nervous force to take hold of their burdens.

While in England I met a gentleman from Worcester, Mass., who builds rolling mills. He showed me a contract for \$10,000,000 of rolling mills to be built in England. He was paying just 50% more for the ma-

terial for use in England than he was paying for the same material in Pittsburgh and Youngstown. The men in England were not working and they could not produce. The fact is that the British people were just like the French—shot to pieces. When you realize that if we had lost as many men by death as France, every man who enlisted under our flag in the war would have been killed and you can get some notion of the sorrow that has swept over the British people when you realize that practically her entire army was wiped out by death. You cannot work when your heart is broken. The fact is that in England, as here, prices are high, wages are higher than they have ever been and production is low.

People are getting together and asking us how we are going to cure this condition of high prices, wages going up to meet the cost of living and production falling down. The first thing you are told is that the profiteer would have to be put into jail. There is some profiteering. The farmer is not a profiteer. Why doesn't the farmer make anything out of it. Take wheat. It is a recognized fact, roughly speaking, that it takes one man's labor one day to produce a bushel of wheat. Now you used to have a man on the farm who would get 50c and his board and washing for that day's work and you had \$1.00 or 75c wheat, but today you cannot hire a man on the farm for much less than three to five dollars a day. Unless the farmer gets four or five dollars for one bushel of wheat, he cannot afford to sell it. That means that the farmer will quit raising wheat because he is losing money and the more farmers who quit, the scarcer wheat gets and the higher the price, so the thing is working all the time to keep prices up.

Now let me ask you to get to the bottom of this thing as I see it. I don't care how much your wages or salary may be, it never seems to be enough at the end of the month. You

always have new expenses. You used to get a good pair of boots for \$5. Today they will cost you \$10 or \$12 and they won't stay with you. Now we cannot go on indefinitely. There is not a street railway company in America today that is not in more or less of financial difficulties. There is not a public utility corporation like the one you work for but what has to exercise the most tremendous skill on the part of its management to keep ahead of the game.

The farmers are quitting by the thousands in the production of food. Men are just throwing up their hands. They cannot go on indefinitely. You cannot raise prices, raise wages and decrease production indefinitely. There comes a point where you have to stop and at that point comes the crash. What is the trouble!? Don't blame it on the profiteer, don't blame it on high wages, although they are an element in it; don't blame it on greed, although that enters into it somewhat. You are face to face with the world condition. You and I have got to think this thing through. It is an established fact that the general stock of food and goods in the world is not more than from two to five years old, that is, all the clothes, all the food, all the tools and all the means of intercommunication, etc., were not here under normal conditions five years ago. They are used and wasted and abused so that they disappear about every two years. That is, you are only two years ahead of the wolf and if you should stop production for two years you would be overtaken by famine in food and goods in normal times. In the last five years the chief business of the world has been destroying goods and food and killing men so that in addition to the normal wear and tear which keeps us only two years ahead of the wolf we have had a complete destruction unparalleled in history.

When I was in France, twelve millions out of her less than forty

millions of people, were homeless. They had no roof over their heads. They had no water supply, no food, no clothing. They had nothing. They were homeless. All that destroyed in addition to normal destruction of food and clothes and goods. If you went into Belgium it would seem like primeval desolation. Absolute destruction as far as the eye could reach.

Now the stock of goods and food in the world is not only below the normal line of peace times but has been sunk down by five years of artificial destruction until the world at this moment is in deadly danger of a starvation and a ruin that would stagger the imagination of men.

When in Europe last August Mr. Herbert Hoover issued a proclamation to the people of Europe—"You are going to have starve to death on the Continent of Europe this winter between twenty and forty million of people and they are in process of starving to death now." There will be at least ten million of the people starve to death in Russia this winter—one of the richest countries that God's sun ever shone on. There will be thousands of men and women die of poor nutrition in England, France and Italy. While we are enjoying our three square meals a day every country in Europe will be enjoying starvation—underfed, underclothed, underwarmed, with a terrible winter on them. I don't believe the civilized world ever saw such a tragedy. What is the cure? It is no use to go on raising prices and wages indefinitely. The only cure is for everybody in the world who can work to go to work and stay at work and produce something, and those who are not engaged in the actual production of goods and food must save everything they can. We are doing neither in any marked degree in this country of ours. Shopkeepers in New York say that they never saw people spending money with such reckless prodigality as this year.

There has been an immense amount of money taken from the rich and distributed among the poor people by the income tax and during the war, and that money just burns holes in peoples pockets. The size of the man is determined by his ability to handle himself and say "No" to himself and we have all got to share in it. We must save everything we can and keep from buying. If you have an old suit of clothes and it looks shiny, get it out and wear it. You are doing something for your nation and for the world. You will never get back to reasonable prices until the stock of the world's food and goods is raised to normal again and we have to overtake at least two years of normal use and five years of abnormal destruction by war so that there will be more work than we can do if all of us work for a whole generation. No working man needs bother his head about not having enough work for everybody for at least a generation.

You are engaged in one of the most useful occupations in the country. I am greatly interested in public utilities because I have, unfortunately for myself, been associated with public utility corporations. I hear great things of the corporation here. I hear that the citizens of this town like you. I have never heard a harsh criticism of the organization in Rochester. I have been inquiring around and find that all classes of people speak well of you. Why? First of all because you started right. You had a great man at the head of this organization, an old and dear friend of mine, Horace E. Andrews, and you have a great man at the head now. You have a leader in the president of this organization who enjoys the respect and confidence of the community. Why does the community think well of you? Because the fundamental principle of this organization is that the community shall be well served. You do not wait for the housekeeper to find out that

the gas is wrong in her range. You have somebody go around and find out what is the matter and make friends of the consumers. You hold in your keeping the destinies of this institution in this community and you recognize that and the moment that that enters your soul it gives you a new point of view. You are producing some of the most vital commodities that the community must have.

My message to you tonight is—think of your job in the background of the conditions of the world and see how vitally important it is that everyone of us in whatever position we occupy gives the community a square deal by serving the community by honest, real work in order to earn the wages and salaries we receive. There are two attitudes toward your job which will determine whether you are a success or a failure. First the attitude of interest. "I need the money and consequently I will assume this burden and bear this slavery six days of the week"—and your one vision is the hands of the clock. Well, friends, I pity anyone who has that attitude toward his work. Work is the greatest blessing in the world if it is the kind of work you are fitted to do. The labor efficiency would be doubled if we could get the square pegs out of the round holes.

Once you find a job you like, it does not matter what your job is. Your work is your worship and you go at it like a slave and say to yourself: "I have work to do for my country and my community and I am going to put the best I have of training and character and soul in this work." And when you adopt that point of view and then get the large view that I have been giving you that you are working for France, Belgium and the starving children of Europe; when you get that in your souls, why there is not any obscure job in industry. We are all brothers and sisters in a great family, working

together for the common good and to lift up the level of happiness and prosperity throughout the world.

The central economic problem of this hour lies in the terrible reality that the world's stock of goods and food is way below normal, that men are not producing as much as they did in the same number of hours—they are getting more pay than they ever did and paying more for their commodities than they ever did and unless they increase the world's stock of goods, there will be a terrible crash. There is only one way to produce and that is to work with courage, perseverance, intelligence and vitality. You cannot get work done by Act of Congress, etc. In the last analysis the only way to get work done is for some worker to do it. If you don't, friends, somebody in your organization will have to do it for you. There is no substitute for sweat and brains.

Now I am going to close by giving you just one vision into the world that you have come to through the war. In the progress of mankind certain great instruments are used by civilized man from time to time to advance civilization. There was a time when war was the chief organ of civilization. There was another time when religion was the chief organ of civilization—when the religious impulse moved men across the sea. America was born out of a religious impulse. We have reached a period now when industry is the chief organ of civilization.

A young man is brought up in a home, he goes to school, reads the paper and goes to church. These four forces make his character and train his intelligence. When he reaches the age of earning a living, he goes into an industrial plant. He goes home to sleep, he reads the sporting columns and I am sorry to say in many cases he does not go into a house of God unless his girl takes him there. For eight to ten hours every day in the week, except Sun-

day, he is in your industry or some other, and there is where his character and intelligence are either made or marred. There is where he is going to be developed into a good citizen or set back into a bad one. There is where he is going to find his life or lose it.

The men who are the most important men in America today are the foremen of our great industries, because these leaders stand next the majority of our population practically all of their waking time. If they do not mold the character and awaken ambition and courage and hope and brotherhood, then evil indeed is the case of our country.

The industry in which you are engaged, is a wonderfully diversified thing. You can be proud of your

leader because he enjoys the respect of the country and community. You can be proud of your industry, you can be proud of the city that you serve because Rochester stands in America as a Queen among cities; you can be proud of the country to which you belong, and when you go to your work tomorrow, think of it as a gift of God, giving you an opportunity to serve your nation, and think of yourself in industry as using the greatest instrument for the advancement of the world that God has ever given to man. In this little crowd here tonight there may be born an ambition that will make you a very leaven in this great city to keep down the revolutionists and keep up the patriotism, to make the nation strong.

Underground Cables

W. G. HAYMAN

General Electric Company

UNDERGROUND Cables for the distribution of electric power can be supplied with any one of the following three types of insulation: varnished cambric, rubber or paper and in all three cases there must be a lead sheath.

Paper Insulation has been adopted by practically all of the large operating companies for underground service, principally on account of its low cost compared with that of varnished cambric or rubber and for its ability to withstand higher working temperatures. Paper insulation, however, absorbs moisture readily and will not stand sharp bends and therefore more care must be used when installing and jointing.

Large companies have expert underground men including cable splicers who are experienced in installing and splicing paper insulated cable. A small company, however, cannot

incur the expense of maintaining such a force.

Rubber Insulation is used to some extent and while it does not require special care in installing as the insulation will stand sharp bends and does not absorb moisture, yet it cannot be operated at as high a temperature as either varnished cambric or paper. Rubber deteriorates rapidly if overheated.

For the small operating company, *Varnished Cambric* is the ideal insulation as it does not absorb moisture, will withstand sharp bends and can be operated at nearly the same temperature as paper.

In the process of manufacture, the paper and varnished cambric are similarly applied, both being put on the conductors in the form of tape. Paper insulation is applied dry and in the case of multiple conductors, part of the insulation is put on the

single conductors, the conductors then being laid up with a suitable pitch, using dry jute fillers to make a round cable and the balance of the insulation is then taped on over all. The cable is then put in a steam heated tank under vacuum and dried until all the moisture is removed from the paper. Then a plastic mineral compound is run on hot and the paper thoroughly saturated. The cable, as soon as it is taken from the compound, is covered with a lead pipe, the pipe being formed around the cable as it passes thru the lead die. The paper should be of the best grade of manilla, free from wood pulp and metallic particles. When applied to the cable it should be put on tight and smooth.

Varnished cambric insulation is applied in the same manner as paper insulation except that the plastic mineral compound is applied between the tapings as they are put on and the jute fillers are dried and treated with mineral compound before stranding up with the insulated conductors. It is not necessary to dry and treat the whole cable as the varnished cloth is dried and the varnish baked on before it is applied to the conductors. The lead sheath is applied as soon as the cable comes from the insulating machines. As in the case of paper insulation, the tapes should be put on tight and smooth.

Referring to rubber insulation, there are many kinds and grades, and it is difficult for one who is not an expert to tell the good from the bad. There are five grades which are used in considerable quantities:

- 1—40% compound—U. S. Navy.
- 2—30% compound, containing no reclaimed rubber. In use by the Bureau of Y. & D. and R. R. Engineers, U. S. Signal Corps, etc.
- 3—30% compound—commercial which may contain reclaimed rubber in addition to the 30% of new rubber.
- 4—Intermediate Grade—30% rubber gum but not all new rubber.
- 5—N. E. Code—20% rubber gum but not all new rubber.

The N. E. Code grade is used in greater quantities than any of the others as this is the grade which is used almost entirely on conductors for inside wiring. Pure rubber is not used as it becomes soft when exposed to heat and also oxidizes rapidly.

Rubber, before it is of any value, must be vulcanized. Vulcanization consists of a chemical combination taking place between the rubber and sulphur when the mass is subjected to a temperature above the melting point of sulphur. A compound made up of rubber, sulphur and minerals such as zinc oxide, litharge and whitening will have better mechanical and electrical properties than one made up of rubber and sulphur. In the cheaper grades of compound, reclaimed rubbers are used which reduce the cost of the insulation and give satisfactory results when used on voltage under 6000 volts.

Rubber compounds are prepared by first taking the crude rubber as it comes from South America or the plantations of Ceylon and running it thru a set of corrugated rolls over which water runs continuously. This breaks the rubber up and washes out any foreign substance such as bark, splinters and earthy matter. It is then vacuum dried to remove all of the moisture. The rubber, sulphur and mineral compounds are then weighed out and put on a rubber mill, consisting of two smooth rolls, revolving together. After all the materials are thoroughly mixed, the rubber compound is sheeted out to the desired thickness on a calender. Rubber compound, during milling and calendering becomes quite warm, due to friction. After calendering, it is allowed to cool down and it is then slit into required widths for applying to the conductor. The rubber strip is applied to the conductor, longitudinally by means of a pair of grooved rolls forming the rubber around the conductor and cutting off the surplus rubber. After the rubber compound

is applied to the conductor, it is wound on an iron reel and put into an iron tank which can be closed and live steam turned directly into the tank. The heat melts the sulphur in the rubber compound, the sulphur combining chemically with the rubber and dry mineral compounds. Another method of applying rubber compound to a conductor is the squirting or tubing process. Here the rubber is forced around the conductor as it passes thru a die. As the rubber has to be softened up by heat in this process, it is not considered as good as the strip process.

A rough way to determine the quality of rubber insulation is to cut off a piece tangent to the conductor using a sharp knife. On the sample, mark with ink or pencil two marks 2" apart; stretch the 2" marks until they are 6" apart and release; one minute after release, measure the distance between the marks. On a good grade of 30% compound, they should not be more than 2¼" apart; on N. E. Code grade, 2½" apart. The sample should then be stretched until it breaks, noting the distance between marks at breaking. On a good grade of 30% compound they should be at least 9" and on N. E. Code grade at least 6" apart before breaking.

Some Facts About Furniture

NORMAN F. PRINCE

EACH year after starting up the furnace for the winter, the woodwork and furniture in houses begin to give up some of the moisture which they have absorbed during the summer. In some homes some peculiar effects are noted, such as the varnish or shellac finish turning gray or white. However, there are other homes in which this condition is not noted until the finish has actually turned white.

This surface action is especially noticeable in some types of wood and finishes. Take for instance an interior, finished in dark mahogany which has been shellaced and rubbed dull with pumice stone. In finishes of this kind the surface action is very apparent. Shellaced woodwork or furniture always turns white, or if a white shellac has been used, a milky white, when brought into contact with moisture. This, however, disappears after a few days or a week, when the conditions in the house have again become normal.

The foregoing will apply to any wood such as chestnut or pine, which has been finished a dark brown or mission black, unless a final coat of wax has been applied. A wax finish will never turn white, provided the excess wax has been removed completely.

This is not the case with a varnish finish. While varnish makes the very best finish, it will turn cloudy and blue, but the finish is not injured at all and if a good grade of cleaning oil is used, the cloudiness will disappear and the surface be as good and bright as ever.

The mission finishes such as fumed oak, weathered oak, green oak, cathedral oak, etc., and the wax or dull finished walnut, very seldom show any sign of turning gray or white, provided of course that they are finished properly and a last coat of wax has been applied. If furniture or woodwork of the above type has been finished with a laquer made of celluloid and amyloacetate (Banana Liquid), it will in all probability turn white.

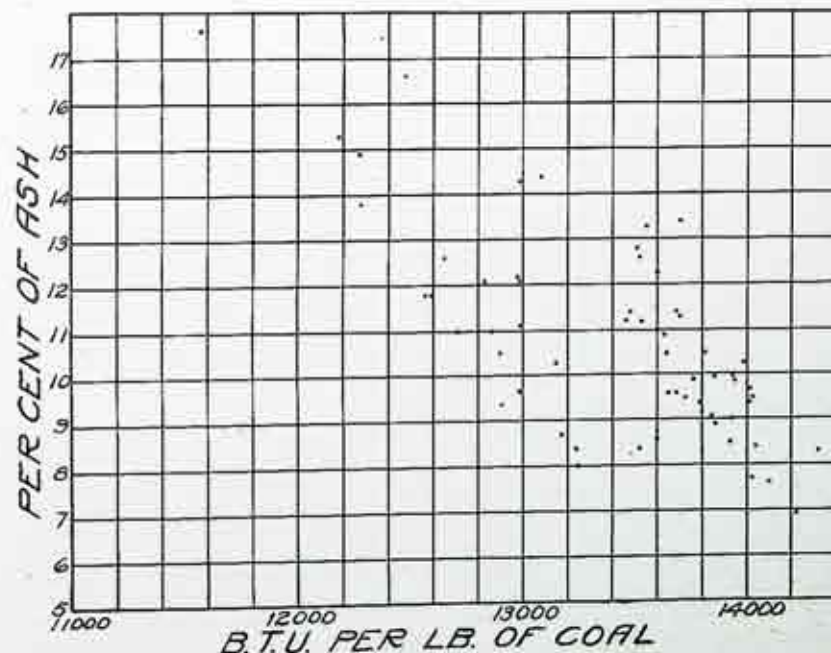
Occasionally it has been said that the use of coke for house heating purposes causes the changes mentioned, but the same trouble will occur regardless of the kind of fuel used. It has occurred in past years and will continue to occur, but it is moisture not coke, which causes shellac and varnished surfaces to turn white and gray.

The Relation of the Calorific Value and Ash of Coals

CHARLES H. STONE

THE calorific value of a coal is an important consideration in determining its value as a fuel. The heat given off to a boiler is only the heat formed by burning the combustible constituents of the coal under the most favorable conditions, preventing so far as possible any loss of heat by radiation, by excess air or in the chimney gases. This calorific value of the coal arises from the heat given off when the carbon, hydrogen and sulphur contained therein are united with oxygen at the proper temperature. The sulphur almost always forms less than 2% of the coal, and is generally under 1.5%, so that for the purposes of this discussion it may be disregarded. The nitrogen and oxygen in coal are likewise low, so that for practical consideration, a coal might be divided into two parts, the combustible or heat forming, and the ash.

Now from the above it would look as though there should be a definite relation between the percentage of ash in a coal, and its calorific value, for as we increase the ash, the heat forming ingredients must necessarily decrease, in order that a total of 100% may be reached. If this were true, it would save a great deal of labor in the laboratory since the ash must be done in any case, and the B. t. u. determination in a bomb calorimeter takes some time. It therefore occurred to us to collect all the B. t. u. and ash results on coals for this year and construct a plot therefrom. If our theory were correct, we could in the future simply determine the ash on a coal, and get the B. t. u. by consulting the plot which is shown in the accompanying figure. To the surprise of everyone with whom I have talked, there seemed to be absolutely no relation between the ash and the B. t. u.



This may be due to several things, one or two which have occurred to us after making the plot.

In the first place, the ash is somewhat of an empirical determination. We weigh out 1 gram of coal, heated to a definite temperature, 700°-750° C., for about one and one-half hours; cooled and weighed again. The residue is considered as ash and is so calculated. Now this clearly takes no account of any chemical changes that may take place in the materials constituting the ash, during the heating. For instance, any pyrites or iron carbonate originally present in the coal have been changed to ferrous oxide, but an even greater error is caused by the organic sulphur. It is not known just how the latter breaks up and recombines, but the fact stated is confirmed by the latest work done on the subject, by Wilbant and Stoffel, and published in the last issue of "Chemical Abstracts."

Again, we may consider two coals which have the same percentage of ash, but the combustible part of one is nearly pure carbon, like a high grade anthracite, while the other contains a smaller amount of carbon and makes up the difference in hydrogen, oxygen and nitrogen. Now while the oxygen in coal is comparatively low (7-11%) it should be remembered that it does not contribute to the calorific value of the coal. Therefore a diminution of 1% in the oxygen content and a corresponding increase in the carbon makes a very considerable increase in the B. t. u. without affecting the ash. The above figures and statements apply to bituminous coals such as we buy; we have done no work with anthracite.

There may be, and probably are, other reasons which will occur to some who read this article, and if so it is to be hoped that they will publish them in these columns, as they may be of great help in the future studies along this line.

Routine Testing of Gas at the Laboratory

MISS EMILY L. CUTLER

MUCH of the gas manufacture carried on at East and West Stations is controlled to a great extent by the routine tests which are made daily at the Laboratory. A short study will show the value of these tests to the operators and the Corporation.

The first and most important of the routine tests is that for the B. t. u. or British thermal unit. A British thermal unit is the amount of heat required to raise the temperature of one pound of water at its maximum density through one degree Fahrenheit. Gas calorimeters are the instruments used for determining these heat values of gas. In the main, the calorimeter consists of a combustion chamber surrounded by a vessel filled with a large number of copper tubes, through which the products of combustion pass. The gas is burned in a burner which projects into the combustion chamber. Cold water enters at one side of the instrument, passes down through a tube to a regulator where the flow of water is controlled. From here it passes upward around the copper tubes and then through the outlet to the receiving vessel. The heat formed by the combustion of the gas is entirely taken up by the water which is constantly flowing through the instrument, the copper tubes affording a large surface for taking up of the heat by the water. Aside from the calorimeter itself, a wet meter, scales and a catch bucket are needed. Very accurate thermometers are inserted in the calorimeter to take the temperature of the inlet and outlet water.

In taking a test the gas is lighted at the burner and the water allowed to flow through the instrument. After this has been done, the burner

is inserted in the combustion chamber and the gas allowed to burn fifteen to twenty minutes. During this time the flow of water through the instrument is so regulated that the outlet thermometer registers about fifteen degrees higher than the inlet. When the mercury in the thermometers is comparatively stationary, the test may be started. At the instant the meter hand has passed the zero mark the stop cock is turned to allow the water to flow into the catch bucket and readings are taken on the thermometers—about ten readings of the outlet thermometer per revolution of the meter hand and two of the inlet thermometer. The meter hand is allowed to revolve twice which measures 0.2 cu. ft. of gas, then the stop cock is turned to allow the water to flow out the drain again; the burner is removed and the water is weighed.

In the calculation of results there are many factors which have to be taken into consideration, such as humidity, barometric pressure, temperatures, stem corrections, thermometer corrections, etc., which would take too much time to explain here. In the final calculations of results the following formula is employed:

$$\frac{\text{Rise in temperature of water} \times \text{weight of water}}{\text{Cu. ft. of gas burned (corrected)}} \\ \text{equals B. t. u. per cu. ft.}$$

The three most important gases tested are coal gas, water gas and mixed gas, the latter being a mixture of the coal and water gas.

The State Law requires that the mixed gas which is sent out to consumers shall have a heating value of 585 B. t. u. If the coal gas made has a comparatively low heating value, the water gas made must have a high heating value in order to bring the B. t. u. of the mixed gas up to the standard. The heating value of the water gas can easily be made higher by increasing the oil added to the gas during the process of making. If on the other hand the coal gas has a comparatively high B. t. u. such as

580, it shows the operators that they can cut down the oil. In this way the B. t. u. tests help to control the successful operation of the plant. If the tests were not taken frequently more oil than is necessary to keep the mixed gas up to the required standard might be used for several hours in making the water gas, and this of course would add very materially to the cost of manufacture of the gas. For example, B. t. u. reported 30 units lower than it actually is, would mean a loss to the water gas plant of about \$78 for a period of twenty-four hours. This fact alone would lead one to understand why great accuracy is needed in carrying these tests.

Gas analysis is another of the routine tests which assists in maintaining uniform operation. Coal gas is analyzed daily; water and mixed gas once a week. For the analysis, the Hempel gas analysis apparatus is used and seven constituents are determined. The first pipette, through which the gas is passed, contains a solution of caustic soda which removes the carbon dioxide, the second contains bromine water or fuming sulphuric acid to remove the illuminants, the third contains phosphorous or pyrogallic acid to remove the oxygen. Carbon monoxide, methane and hydrogen are determined by exploding a given amount of gas diluted with a known amount of air, in which the percentage of oxygen has been determined. From the contraction, the carbon dioxide formed and the unused oxygen which remains, the three above constituents are calculated by means of formula. The seventh constituent, nitrogen, is determined by difference.

By means of these routine tests made in the laboratory daily, those in charge of operation can keep in touch with the conditions under which the gas manufacture is being carried on and thus have more efficient operation and keep the cost down to the lowest possible figure.

GAS AND ELECTRIC NEWS

Published Monthly by the
ROCHESTER GAS & ELECTRIC CORPORATION
34 Clinton Ave. N., Rochester, N. Y.

FREDERICK W. FISHER Editor
CHARLES B. EVANS Assistant Editor
DWIGHT C. ROCKWOOD Photographer

Department Correspondence Staff

Sales

FRANK C. TAYLOR Industrial
JOSEPH P. MACSWEENEY Domestic

Electric Operation

GEORGE A. BAILEY Generation
HENRY A. DAVIS Distribution

Gas Operation

WILLIAM H. EARLE Manufacture
FRANK HERRING Distribution

Auditing

FREDERICK H. PATTERSON
Engineering and Construction
HOWARD HARDING

Material may be copied provided proper credit
is given.

Vol. VII DECEMBER, 1919 No. 6

Paying for Supervision

IT HAS been said that everyone pays for his or her own supervision. This means that the man at the top who requires no supervision at all receives in salary or business return all he earns without deductions. All the way down the line each employee pays something for the supervision of everyone who directs his work, and consequently one of the surest ways to get an increase in pay is to lessen the amount of supervision required.

A prominent man said recently "I have two kinds of assistants. When I give instructions to one kind I keep a memorandum thereon which will turn up from time to time. Each

time it turns up I inquire as to whether the work is done, and often I have to inquire several times. When I give instructions to the other kind of assistants I do not keep a memorandum, for I know that the work will be done without any follow up. One of these days there will be only one kind of assistants in my office."

The Greatest Difficulty

WHAT is your greatest difficulty? Recently a man was overheard declaring that the reason for his failure in life was the fact that he had not overcome the greatest difficulty that he had faced during his life with the result that he had been a failure.

A reply was made to him by a successful man, one who had "arrived." "Your mistake," he said, "first was in acknowledging you had a 'greatest difficulty.' Just as soon as you admitted to yourself that you were faced by something that seemed to dominate you then you built a wall that just closed you in and you placed an obstacle to your chances of success. If you have difficulties, and all of us do, meet them all squarely face to face, and see how quickly they are leveled and become commonplace. Don't ever admit there is a possibility of any of them becoming great or so powerful that they can really influence your life beyond being an incident. When you have once done this then success surely will come."

The advice seemed so sound and logical that we have reprinted it here. If you have a difficulty or a

problem that seems beyond solving then it is time to dig in and fight, to dig in and clean up in such a way that the "greatest difficulty" becomes as nothing.

The "greatest difficulty" has been responsible for more individual and company failures than any other factor, for it means underneath the admission that a problem does exist in the quitter's whine, "What's the use?"—*Gas Service.*

Courage is Indispensable

COURAGE is indispensable. A weakling can keep pace with strong men when there are no obstacles to surmount, no foreboding clouds to chill the spirit, no losses to shatter confidence, no grief to sear the soul with disappointment and anguish. But in 'the times that try men's souls' the strong man rises above the crowd. Emergencies and changes do not frighten him. He bends circumstances to his purposes. Difficulties infuse zest into his tasks.

"There is, however, a wide gulf between confidence and blatancy. No man of ability need go about blowing his own horn. His work rings truer and sounds louder than a self-blown trumpet. He needs no pull. He is wanted by every aggressive organization in the country. Workers should know that employers like men to come to them with ideas, not always for ideas.

"This is a glorious time for being alive and healthy and earnest and ambitious. There is so much to be done throughout the world. Great human needs have sprung up and will continue to spring up everywhere. A

clarion-call has gone forth for men—men who can plan and dare and do, who can rise superior to temporary defeat, who can find channels in which to make themselves really helpful to the world. It is trite but true that, though there is crowding at the bottom of the ladder, there is not only room but a universal demand for men at the top. The way to reach the top is to get your foot planted squarely and firmly on the first rung and climb so fairly and tenaciously that nobody will or can knock you off."—*Forbes Magazine.*

Personality by Telephone

I LIKE her voice," you say. You may add, "I like her." So closely does one associate a pleasant voice with a pleasing personality! Likewise, a harsh, querulous voice is apt to make a distinctly disagreeable impression, especially, it seems, when it is heard over the telephone. In this case, distance, instead of lending enchantment to the speaking voice, appears to lay bare all its defects.

Perhaps this is because the feeling of antagonism that one experiences on hearing a harsh voice over the wire is due to the fact that there is no smile to accompany it, no facial expression to soften it, as is so often the case when two people are talking directly to each other.

If it were more generally realized that personality is sent along the wire with the voice, and that the speaker is as a rule judged by that voice, many wrong impressions would be eradicated, and pleasant ones made.

—*Telephone Review.*

Gas Manufacture

As a partial relief of the coal situation, two boilers at East Station have been put into service burning oil tar, at the rate of 3,000 gallons per day. By weight alone, that is equivalent to about 14 tons. But the B. t. u.'s per pound of oil tar are higher than in coal, approximately in the ratio of 18 to 13. The 14 tons of oil tar is therefore equivalent to nearly 20 tons of coal.

Furthermore, if the efficiencies of the tar burning boilers are as they seem to be at the writing, they are nearly twice as great as in coal boilers and the saving in coal amounts to about 40 tons per day, or nearly a carload.

ON Monday, December 29th, a good deal of annoyance and discomfort occurred among the Corporation's gas consumers due to an excessive amount of sulphur in the gas. Investigation early that morning showed that a shipment of a very high sulphur coal had gone into the plant on Sunday and that as a consequence, the unpurified gas was carrying more than 1,500 grains of hydrogen sulphide per hundred cubic feet. This so overloaded the purifiers that they were unable to remove it all and the consumers were burning considerable sulphur in their appliances. Fortunately, that morning there was a train of first class coal on the tracks, which was worked into the retorts as rapidly as possible. Extra purifiers were thrown into the coal gas service. No. 10 holder at Blossom Road which was practically free from sulphur was isolated from the gas pumping system, so that it would not be polluted. By 5:30 that evening the raw coal gas was down to a normal sulphur content, the purifiers were handling their work

and the gas in the holders was reduced to a very faint trace of the obnoxious matter.

ON December 15 occurred the maximum gas sendout for 1919—9,820,000 cubic feet. This is very nearly a million greater than the 1918 peak of 8,763,000, but it is more than 100% higher than the peak of 1909 which was 4,761,000.

This was the fourth consecutive year in which the peak has fallen on some date other than December 24th. In 1916 the peak came on Sept. 15th, 1917 on December 10th, 1918 on September 10th, and 1919 on December 15th. For nine years previous to 1916 the maximum load has been on December 24th, with the single exception of 1911.

The total gas made during 1919 was 2,675,978,000 cubic feet, an increase of one hundred and seventeen million over 1918 or 4.6%. The ratio of total make to the maximum day was 273. As has been explained previously in these columns, the ideal condition from the operators view point would be uniform daily load, but as that is scarcely to be expected, especially on holidays and Sundays, a uniform load for 300 days a year is about the ideal. As the ratio between the year total and the maximum day approaches 300, it is evident that the coal is stabilizing itself by filling the valleys and cutting down the peaks. In 1917 and 1918, the ratios were 291 and 292 respectively, the best ever attained in Rochester.

Gas Distribution

Work of changing the 12" main on Driving Park Avenue, to a medium pressure line is nearing completion and it is hoped by the middle of Jan-

uary to have medium pressure gas out as far as the Rochester Motors Corporation.

The Gas Shop likewise has been unusually busy for this time of the year. The cold wave caused numerous freeze ups and for two days the total number of complaints received numbered 552. However the boys set to work with such pep that every one was taken care of in short order.

The preliminary work of the investigation of the Gas Distribution system has been completed and it is hoped that the Corporation's future policy in regard to the extension of the Distribution system will be definitely determined by the 15th of January. This investigation includes plans for providing gas for sections of the city which are now in the process of building up.

The extremely cold spell that Rochester experienced just before Christmas made the regular gas distribution work exceedingly difficult. The frost penetrated from 16" to 20" into the ground. As a result, the work on the 16" main extension on Maple Street was slowed up considerably due to the continued cold spells. It has been definitely decided to abandon the street department main work until the weather moderates somewhat or else until early spring.

Industrial Sales

George Todd & Company has purchased two sections of Garland Hotel ranges and one Vulcan bake oven for a new restaurant.

James Vonglis, 30 Main Street West, has purchased a candy furnace for his new store in the Powers Hotel Building.

The Ouriel-Baken Company has installed six glass pressing furnaces and one annealing furnace in its new plant on Exchange Street.

The St. Johns Episcopal Mission, Denver Street and Parkside has purchased one section of Garland Hotel Range, one steam table and one coffee urn.

The Whitcomb House has purchased two sections of Garland Hotel Range and necessary gas equipment for its bake oven which will displace all coal equipment in the kitchen.

Saeli Brothers, Tailors, 390 Clinton Avenue North have purchased one five H. P. gas fired steam boiler which will be used for supplying steam to their pressing machines.

Electric Generation

The 100 K.W., D. C. generator installed at Station 6 nearly a year ago and which has stood idle on account of the Barge Canal Harbor Construction, was put in service on Friday, December 5th, 1919.

A new 11,000 volt, 60 cycle tie line, No. 613, between Station 5 and Station 3 which was cut in November 24th developed a "bug" in the form of a short circuit between phases. This animal was, however, soon located and exterminated and the tie line is now carrying its share of the load in a very satisfactory manner.

The 25 and 60 cycle turbine diagrams together with the schematic diagram of the generating, rotary and transforming equipment have re-

cently been revised and brought up to date in order to promote their usefulness. All contemplated changes and additions affecting them should be reported to G. A. Bailey, Room 12, at the earliest possible date.

Recent Accidents

In Public Utility Companies in New York State

Injured man was lifting a ladder and sustained a hernia. Many hernia cases would be prevented were men to ask for sufficient help when handling heavy objects.

This boiler operator in walking down an inclined runway turned his ankle and ruptured a ligament. There is no indication that this is other than a case of turning an ankle for no apparent cause.

Lineman fell from tower wagon while installing a street light bracket. The old fixture, on which he rested his weight, broke. Both legs were badly bruised. Proper precaution would have prevented this accident.

While installing conduit this man permitted it to come into contact with an 11,000 volt bus. Both hands and his right foot were severely burned. This case is under investigation to determine what should have been done to anticipate this accident.

Gas maker did not purge generator for a sufficient time to clear the gases out of the machine; he also left the oil valve open, which probably allowed some oil to get into the machine. As a result, when he opened the stack valve, the excess gases ignited and flashed down. Both arms from the elbows down were severely burned. The man was an experienced gas

maker and undue haste combined with careless operation are the causes for the accident. The hot wax treatment was applied with very satisfactory results.

Shortly after midnight a troubleman went out on a call and found a street lighting circuit grounded on a viaduct. In climbing a girder of the viaduct, he lost his hold and fell about 20 feet to the pavement. His skull and both wrists were fractured and he died three hours later in the hospital.

In his desire to clear up the trouble with the least delay he climbed the girder. It was a wet slippery night and on a nearby pole he could have cut the wires clear in comparative safety. This man has seen 18 months service in France in a machine gun battalion. He was a widower and leaves an eight year old son.

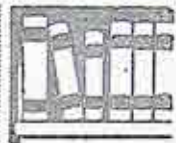
Injured man climbed a pole to renew a suspension street lamp. He placed his safety belt over the iron messenger wire supporting the lamp and slip out from the pole. The pole broke off at the butt and the man fell to the ground. His right foot was broken, his right hip and left foot were badly bruised and he was internally injured.

This accident might have been prevented had a thorough examination been made of the pole butt. Incidentally, it is another proof of the urgent need for periodic and thorough pole examinations to weed out just such treacherous poles.

The practice of sliding out on a messenger using the safety belt, as this man did, is a rather common one. It should be discouraged. In such work a proper ladder should be used and at least one groundman should be present to hold the ladder and guard it from passing traffic.



Auditing



New Business

Net Increase in Consumers in First Ten Months of 1919

	Dec. 31, 1918		Oct. 31, 1919		Increase
	1918	1919	1919	Increase	
Gas.....	79,037	79,471	79,471	434	
Electric.....	28,907	30,469	30,469	1,562	
Steam.....	88	98	98	10	
	108,032	110,038	110,038	2,006	

Net Increase in Consumers in Twelve Months Ending Oct. 31st, 1919

	Oct. 31, 1918		Oct. 31, 1919		Increase
	1918	1919	1919	Increase	
Gas.....	79,130	79,471	79,471	341	
Electric.....	28,881	30,469	30,469	1,588	
Steam.....	88	98	98	10	
	108,099	110,038	110,038	1,939	

Statement of Consumers by Departments as of Oct. 31st

Oct. 31	Gas	Elec.	Steam	Total	Increase
1908	40,736	6,346	—	47,082	—
1909	44,680	7,189	—	51,869	4,787
1910	50,866	8,584	—	59,450	7,581
1911	56,179	10,442	17	66,638	7,188
1912	60,868	12,849	20	73,737	7,099
1913	66,133	15,272	23	81,928	8,191
1914	69,654	18,140	30	87,824	5,896
1915	70,968	21,714	39	92,721	4,897
1916	75,121	24,782	41	99,944	7,223
1917	78,634	27,460	51	106,145	6,201
1918	79,130	28,881	88	108,099	1,954
1919	79,471	30,469	98	110,038	1,939
Inc. in					
11 Yrs.	38,735	24,123	98	62,956	62,956

Net Increase in Consumers by Months

	1917	1918	1919
Increase in January.....	194	54	*69
Increase in February.....	*19	56	*463
Increase in March.....	386	183	*277
Increase in April.....	608	322	307
Increase in May.....	568	508	417
Increase in June.....	726	292	441
Increase in July.....	713	*53	285
Increase in August.....	669	*17	416
Increase in September.....	554	147	470
Increase in October.....	584	125	479

* Decrease. 4,983 1,617 2,006

Miscellaneous Data

	Oct. 31, 1919	Oct. 31, 1918	Increase
Miles of Gas Main.....	491	488	3
Miles of Overhead Line.....	1,930	1,900	30
Miles of Underground Cable.....	1,142	1,133	9
Miles of Subway Duct.....	998	997	1
No. of Street Arc Lamps.....	1,647	1,636	11
No. of St. Inc. Lamps.....	8,906	8,810	96
Total No. of St. Lamps.....	10,553	10,446	107
No. of Employees.....	1,283	1,192	91
Amt. of payroll (Mo.)	\$159,646.69	\$135,498.66	\$24,148.03

E. B. A. for Month of Nov., 1919

Receipts	
Balance November 1st, 1919.....	\$3,946.47
Dues—Members.....	\$705.57
Dues—Corporation.....	705.57
Fees—Members.....	9.00
Fees—Corporation.....	9.00
Assessments Nos. 26, 27, 29, 30, 31—Members.....	8.00
Assessments Nos. 27, 30, 31—Corporation.....	7.25
Interest on Bank Balance and Investment.....	142.50
Return of Sick Benefit.....	4.28 1,591.17
Total.....	\$5,537.64

Disbursements	
Sick Benefits.....	\$484.11
Accidents off Duty Benefits.....	81.57
Accidents on Duty Benefits.....	87.96
Death Benefits, Nos. 30, 31.....	800.00
Membership Fee.....	1.00
Group Life Insurance.....	65.16
Medical Examiner's Expense.....	7.50
Members' Military and Naval Expense.....	2.40 1,529.70

Bal. on hand November 30, 1919..\$4,007.94

Membership	
Members October 31st.....	928
Affiliated November.....	8
Terminated November.....	28 20
Members November 30.....	908

Good and Evil of Window Glass

WINDOW-GLASS is a recent invention, a mere matter of yesterday as we count the life of the race, and it has its bad as well as good points. In fact, there is no doubt that it is affecting our health and our industrial and social conditions very powerfully. So at least says Dr. R. E. Danforth of Rutgers College, in an article on "Window-Glass as a Factor in Human Evolution," contributed to *The Scientific Monthly* (New York, June). Dr. Danforth points out that this action, whatever it may be, is recent. Glass is ancient, but not window-glass; and the general use of glass sheets in the windows of ordinary dwellings is a thing of comparatively recent times—probably a couple of centuries. We must realize the benefits and injuries of glazed windows if we are to retain the good while mitigating the evil, as this writer advises us. His article is directed to this end. He says in substance:

"That window-glass is a factor of prime importance in the evolution of man has not been sufficiently elucidated. Not that glass has had much to do with shaping his body and brain of to-day—it has not had time to do that—but that the thoughts filling his mind, that the greater part of his activities, and that the bodies and brains of generations to come are and will be greatly influenced by window-glass; and that in it are serious dangers as well as boons. The thought is astonishing, yet simple of proof, and clear as the light which comes through the windows in question.

"Before window-glass became a common possession of the people there came into homes and shops the air and temperature of outdoors through the openings which admitted the light of day. The air was beneficial, but the temperature it brought with it not always so. When the outdoor temperature was not too low and the outdoor air not in too great activ-

ity, life and industries within could go merrily and well, but let either the air or its temperature be unfavorable, and at once discomfort and a necessary cessation of certain activities ensued. "Think of the demoralizing effect of such uncertainty upon industry. Modern inventions could not have come in such marvelous profusion before the day of this one invention of a simple device admitting daylight and excluding to a great extent the outer temperature.

"Even to-day if window-glass should become one of the 'lost arts,' a large number of other inventions would at once cease to be useful or be forgotten through neglect, even despite the fact that artificial illumination has made remarkable strides.

"But some one may object: was not glass manufactured and distributed by the ancient Phoenicians? Yes, and probably before these by the Egyptians. How then can we attribute our very recent and radical changes to window-glass? It is indeed surprising to think how new is the general use of glass in windows when the substance had been known so long and used for vases and gems and, now and then, in some sort of window. The common people, however, had no such luxury in their homes and shops. Recent terrific explosions in New Jersey, breaking windows in many hundreds of homes and other buildings, brought home to some for a few days our real dependence upon window-glass to-day."

Window-glass in Roman times was cast, Dr. Danforth tells. The art of casting glass seems to have been forgotten until 1688. Yet window-glass was even then the prize of kings and nobility, and these had only a scant supply. In the time of Elizabeth glass windows were so rare and costly that some noble when he left his city residence had the glass windows carefully removed. In the time of Charles II., glass was not used in all of the rooms of the king's palace. He goes on:

"It seems safe to assume that while many individuals may have had scant supplies of window-glass by the middle of the seventeenth century or earlier, the commodity could hardly have been common before the eighteenth century, hence its effect upon human customs, industries and mode of life could not have begun to operate appreciably before that time. The great change in home life and the change in industrial life and in the industries themselves could not begin until an abundance of cheap glass filled all homes with a flood of daylight, and all shops and offices and factories as well, keeping in the artificial heat at the same time. From that time the outdoor life rapidly lost its people while the world of indoors gained devotees, willing or unwilling, by thousands of thousands. A host of new industries sprang into being in the wake of window-glass, and these begot other industries, scientific inventions and discoveries with magic rapidity.

Large factories were made possible, big business began and the physical conditions of home life were completely changed. The air which all breathed, in home and shop and office, became at once far less pure, its oxygen was consumed and it became flecked with fine dust, and the pristine rigors of a temperate climate, with all that they had meant for the vigor of the northern peoples, were commuted to conditions of tropical evenness of temperature with what debilitation such brings and without the constant renewal of air which might be had in the tropics. Altho this change came but yesterday, already a marked increase in physical debility in our most 'civilized' populations is a matter of common comment and concern.

"With window-glass the habits of life and livelihood are completely changed, habits of thought are revolutionized and the field and scope of thought changed. The whole environment is changed for the species, including temperature, humidity, ma-

terial environment, composition of air breathed, visual and mental horizons, and a change in the relative adjustments of human beings to disease germs. Such radical changes both within and without the human organism are bound to produce physiological changes in the individuals. They also set in motion new factors in the evolution of the race.

"With window-glass man leaves his outdoor or semi-outdoor activity and becomes a modern industrial worker or office-server. With a sturdy foundation of outdoor health behind him he may not notice ill effects of degenerating muscles or dust-clogged respiratory tracts, and he may pass on to his offspring for two or three generations a vigorous heredity. The heritage of the ages is not lost over night, yet already we note inroads into the health and vigor of the people. Industries indeed evolved prodigiously, but 'advance in civilization' is not necessarily human evolution.

How then is window-glass a prime factor in human evolution? First, it changes man's environment and changes his field of thought. Secondly, it alters the temperature and humidity of his environment. Thirdly, it gives him air of a different quality and composition to breathe. Fourthly, it compels him to inhale fine dust constantly. Fifthly, it removes outdoor activity from all women and most men in 'up-to-date' communities. Sixthly, the germ content of the air in confined buildings is greater than normal, especially so in times when colds and other infectious diseases abound. The muscular degeneration consequent to the changed manner of life will make its permanent change in the race of tomorrow; so will the reduced vitality resulting from the causes just mentioned. Great care should be given to the subject of window-glass, that we may see to it that we reap the blessings it brings with it and avoid the bane."

—*The Literary Digest.*

A Correction

On page 70, November issue of G & E News, the sentence "County tax bills also are payable each year in the month of May without interest," should read: "County tax bills are payable each year in *January* without interest."

Personals

Miss Ruth Porter, of the Telephone Department, spent Christmas at her home in Lima.

Miss Ada Guttridge, of the Tabulating Department, spent a very pleasant Christmas vacation with relatives at Phelps, N. Y.

A son, Frederick S. by name, was born to Mr. and Mrs. Edgar R. Crofts December 20, 1919.

Mr. Earl M. Farnham of the Electric Meter Department captured first prize at the Masque Ball of the I. A. R. A. on New Years' night, for having the most comical costume.

Yes, we have some real bowlers in the Corporation which is shown in the fact that Mr. Ernest E. Friday of Station 3 won first money for individual high score in the Industrial League at the Elm Bowling Alleys a couple of weeks ago. His game reached the 255 mark. We would like to see more of these kind of games.

Mr. David B. Sonneborn, of the Industrial Sales Department, spent the Christmas holiday at his home in Baltimore.

Mr. Raymond A. Munro, of the Industrial Sales Department has resigned his position to take up sales engineering work with the Commercial Electric Supply Co. of Detroit, Mich.

The girls of the Payroll Department, have organized a "Sewing Party" which meets every second Friday evening at the home of one of the

members. The gatherings are very successful both as to sewing and general good times.

The mother of Mr. Charles E. Sharpe, of Station 3, died at Hornell, December 17, 1919.

Mr. Martin B. Stone died at his home, 207 Flint St., December 14, 1919. Mr. Stone has been connected with the Gas Department continuously since 1873. He was one of the first gas meter installers employed by the old Company and leaves behind him a fine reputation for faithful and efficient service.

Mr. Chester R. Schlenker, of the Gas Shop, was seriously injured when his motorcycle collided with an automobile on Clifford Avenue.

Mr. Frank W. Prodick, for the first time in eleven years, is absent from his work at the Gas Shop on account of illness. His associates at the Shop are hoping to have him with them at an early date.

The week before Christmas Mr. Walter J. Hanifen went around with a very happy dreamy smile on his face. It is reported that Walter bought a diamond, hid it in a box of candy and presented the box to some lady friend. You can imagine the rest.

Mr. William J. K. Sutherland, of the Motor Department, has resigned his position and has gone to Milwaukee, Wisconsin, where he will be connected with the Construction Department of the Milwaukee Railway and Light Company. The reason for this change is the condition of Mrs. Sutherland's health which is such that a change of climate became necessary. Since 1893 Mr. Sutherland has been in the employ of the Corporation in various capacities at Stations 1, 2, 3 and 4. For three years before leaving, he was connected with the Motor Department. The good wishes of his friends and associates go with him.

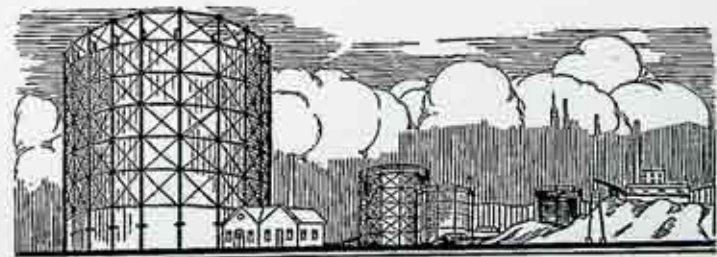
It Can!

There's a thousand "can't-be-don-ers"
For one who says "It can!"
But the whole amount of deeds that count
Is done by the latter clan.
For the "Can't-be-don-ers" grumble,
And hamper, oppose and doubt,
While the daring man who says, "It can!"
Proceeds to work it out.

There isn't a new invention
Beneath the shining sun
That was ever wrought by the deed or thought
Of the tribe of "Can't-be-done."
For the "Can't-be-don-ers" mutter,
While the "Can-bes," cool, sublime,
Make their "notions" work till others smirk,
"Oh, we knew it, all the time!"

Oh, the "Can-bes" clan is meager,
Its membership is small,
And its mighty few see their dream come true
Or hear fame's trumpet call;
But it's better to be a "Can-be,"
And labor and dream and—die,
Than one who runs with the "Can't-be-dones"
Who haven't the pluck to try!

Berton Braley, *Bessmer Monthly*.



I Resolve—

- To give the best service of which I am capable in any position I may be placed;
- To keep my chin up and a smile on my lips in face of difficulty and disaster;
- To dismiss from my mind all dark, unpleasant thoughts;
- To be cheerful and optimistic;
- To be charitable in dealings with my fellows;
- To avail myself of every opportunity to increase my efficiency and make myself more valuable to my employer;
- To stand firmly for my country and do all in my power to protect it from the stigma of lawlessness and disloyalty;
- To meet with distrust and resentment any attempt made to involve me in any movement of questionable motive which may disturb the peace of our people;
- To exercise my franchise as a citizen by voting against undesirable measures and for men of unquestionable loyalty and integrity;
- Not to forget the obligation I owe to the brave men who fought for the preservation of liberty for myself and my fellows;
- To cherish the memory of those who forfeited their lives in the overthrow of autocracy;
- To work constantly to the end that the coming year may be filled with good things for the benefit of all.

—*John Deere Magazine.*

