

CITY COUNCIL PROCEEDINGS

Mayor's Veto Continues to Be Overridden by Mr. Wiley's Aids.

HIS FORCES ARE KEPT WELL IN HAND

All Bids on Electric Street Lighting Rejected, Hascall Declaring that Lower Figures Are Expected—Routine Business Transacted.

The accumulated bills of the Thomson-Houston Electric Light company, amounting to \$16,719.35, were successfully railroaded over the veto of the mayor at the regular meeting of the city council last evening. The Barber Asphalt company was less fortunate, as it lacked one vote of the number required to pass its claim over the veto.

There was a good sized stack of vetoes to be disposed of, the most important of which was that of Mr. Wiley's claim, which was read as follows:

I have vetoed six items in the appropriation ordinance under vouchers, being the bills of the new Omaha Telephone company for the months of June, November and December, 1890, and for February, March, April and May of this year, amounting in all to \$15,719.35. As all of the councilmen know these bills were vetoed as they were passed, and the vetoes were sustained. It is now proposed to allow them, as I am informed, in pursuance of an agreement made between the Thomson-Houston company and the council, whereby the price of its lights for the remainder of the contract period, or five months, to be \$1.50 per month in consideration of the allowance of these bills.

By such a reduction the city will save \$2,745 during the five months. The five months covered by the original contract of the company, in other words, in consideration of the payment of \$1.50 per month, the city allowed a reduction amounting to \$2,745. When it is considered that the city is not entitled to this money and it would receive it, I am satisfied that no court would allow the full amount of this claim and I believe that the price of the amount is practically a gift to the Thomson-Houston company. For these reasons I have vetoed a similar nature which I have enumerated in my former vetoes of these same bills. I have vetoed the items referred to.

Mr. Wiley had his forces well in hand and the veto was overruled without debate. Bruner, Burkley, Cahn, Ellasser and Lemley voting to sustain the mayor's veto.

BARNER NOT SO LUCKY.
The following veto of the Barber claim was sustained:

I respectfully report that I have vetoed an item in the general appropriation ordinance in favor of the Barber Asphalt company for the sum of \$2,250.00 for the reason that this is a payment and recognition of an old claim for street repairs claimed to have been done during the year 1890, and that the street repairs for that year were not done in conformity with the contract, and the repairs were not required by the express orders of the Board of Public Works as given from time to time by the chairman of said board. I believe this claim, before it is recognized as valid or entitled to payment, should be passed on by the proper court and the amount that the Barber Asphalt company is entitled to receive should be determined by a jury. The fact that no action whatever has been taken to collect this claim or to have the amount due the Barber Asphalt company for street repairs in 1891 determined by a court would indicate that the contention of Mr. Wiley, who is then chairman of the Board of Public Works, that the Barber Asphalt company was not complying with its contract or with the orders of the Board of Public Works, was well founded. It is a matter of common knowledge and general notoriety that during the year 1891 the asphalt streets of the city of Omaha were not repaved and holes without number were allowed to exist. I also veto this item for the reason that the item as inserted in the appropriation ordinance is in the nature of a settlement and an express order of the Board of Public Works, and the amount of the settlement of the claim of the Barber Asphalt company for the sum of \$12,500.00, which, after crediting the amount proposed to be allowed by the item vetoed, would leave due the Barber Asphalt company an admitted balance of \$2,250.00. I do not think the council or mayor should make any recognition of this claim and should not be required to commit the city to the payment of this entire claim, as is proposed by the item as prepared and inserted in the appropriation ordinance.

The concurrent resolution instructing the city treasurer to hold the sum of \$5,000 in the general fund to reimburse the city for the cost of the license fees which they had paid before the ordinance was declared illegal by the courts was vetoed by the mayor for the reason that the money paid in had gone to the Board of Education, where the dealers should look for their redress. The veto was sustained.

The mayor also vetoed the ordinance granting a franchise for a street and block directory. This was accompanied by a protest signed by several prominent downtown business firms, and the veto was sustained.

The April bill of the Thomson-Houston company was passed over the mayor's veto. Similar action was taken with the item in the last appropriation ordinance of \$800 for the alleged smoke consumers furnished for the city hall by W. S. Hutchinson of Chicago.

The plans for the repairing of the Sixteenth street viaduct, as submitted by the city engineer, were approved, and the comptroller was directed to advertise for bids on the contract.

A bill of \$270 for groceries used at the past during the smallpox scare was referred for investigation, as some of the members declared that some of the items were excessive.

The union depot resolution passed at the meeting of Stubb, Hascall and others at the Mercer hotel some time ago was presented for the approbation of the council. It was placed on file.

The city engineer and the chairman of the Board of Public Works were directed to examine the plans of the Tenth street viaduct and report on the condition of the same.

A resolution was adopted setting aside \$1,000 for the use of the Board of Park Commissioners in the purchase of a new park and an equal sum for the improvement of the southeast boulevard leading to River-view park.

A resolution by Ellasser providing that the city attorney be instructed to draft an ordinance regulating the price of electric lighting for commercial purposes at 25 per cent less than the rate for domestic use was considered and referred to Mr. Wiley's general committee.

A resolution ordering the pavement on Tenth street near Howard repaired with wooden blocks was adopted on recommendation of the committee.

TO GET LOWER BIDS.
The electric light must look another inning when the report of the general committee on the bids for the three-year contract was presented. The majority report, bearing Hascall's signature, averred that the Citizens Electric company, which had made a bid of \$57.50 per light per year, had no existence in law, as it had not been incorporated, and its representatives had refused to give the committee the names of the gentlemen composing the company. The bid of William Baker of \$60 per light per year was also rejected, as it was not a bona fide bid, but the committee had received assurance that still lower bids would be forthcoming, and recommended that all bids be rejected. The minority report, signed by Cahn and Lemley, recommended the letting of the contract to the Citizens company as the lowest bidder. The city clerk reported that a vote of 8 to 8.

The following ordinances were passed: Levying special tax to defray cost of abating nuisance under the direction of the Board of Health; levying special tax to defray cost of widening Bancroft street from Tenth to Eleventh streets; levying tax for filling lots in Clifton place; levying special tax for grading alley between Cass and California and Twenty-fifth and Twenty-sixth streets; special sidewalk tax ordinance; amending ordinance regulating tax on driving; providing for opening Fourth street at right of way of Omaha & Southwestern railway; changing grade of portions of Thirty-third and Dodge streets; establishing grade of Woolworth avenue from Thirty-second avenue to Thirty-third street; establishing grade of Thirty-fifth street from Poppleton avenue to Hickory street; establishing grade of Thirty-third street from Davenport to Dodge streets; grading sewer district No. 209; providing for

grading Thirty-eighth avenue from Dodge to Davenport streets; changing curb line of Corby street from Fifteenth to Twentieth street and Thirty-eighth avenue from Dodge to Davenport streets; declaring necessary grading Thirty-fifth street from Farnam to Dodge street.

WASH DRESS GOODS AND SILK SPECIALS FOR WEDNESDAY.

The only place in the west where you can find anything like an assortment to pick from.

Silk striped zephyr, reduced to 25c yard. 22-inch wide canton cloth, 5c yard. Plain black satin, 5c yard.

Fancy printed serpentine crepe, 15c yard. Light or dark ground challies, 25c yard. Scotch lawn 5c yard.

Two tables full of remnants of wash dress goods at greatly reduced prices.

Tomorrow morning we place on sale the biggest bargains in odds and ends offered this season. Remnants of plain colored satins, black beiford corset remnants of black side band laces, remnants of Indigo blue prints, remnants of yard wide half bleached muslin, etc., etc., etc.

Be on hand at 8 a. m. for these special bargains, for they will go quick at these prices.

SILK SPECIALS.
Black India silk, 27 inches wide, 49c. Cream wash silk, 27 inches wide, 49c. Cream wash silk, yard wide, 50c. Black India silk, yard wide, 75c.

Black muslin silk, all silk, 75c. Black twilled India, 27 inches wide, 98c. New seeded taffeta silks, 98c yard.

The latest fashions just received.
Black satin chamois, 24 inches wide, 98c. Black duchess satin, 24 inches wide, 85c. Never buy any silk without getting our prices first.

HAYDEN BROS.,
Leaders in Silks and Wash Dress Goods.

OUR FRIENDS YELL
Will It Ever Stop?
ECHO ANSWERS NO!

Not until every dollar's worth of our magnificent stock is sold, cost not considered.

Borrow money at 6 per cent and invest it at our retiring from business sale, and make at least 100 per cent on your investment.

You may just as well save \$20 or \$30 by buying a carpet now, as to wait and pay full price. Everything you buy from us is good.

We have no shoddy. If you buy what you don't want, sell it to your neighbor this fall at a profit. Ask anybody if the bargains are not genuine at our sale. If they don't say "yes," they don't buy from us.

Retiring from business.
THE MORSE DRY GOODS CO.,
16th and Farnam street.

Esteemed Friend,
The time has come when the Morse Dry Goods company have determined to retire from business. Their stock is a grand one.

Anything that was undesirable, has been sold at their numerous sales during the past year. Now, everything in stock is fresh and new. If you want for summer and fall use \$200.00 worth of dry goods, you can save at least \$100.00 by buying them now. This sale is different from any ever held in Omaha, and while thousands are profiting by it, we want every one to share in the bargains.

Retiring from business.
THE MORSE DRY GOODS CO.,
Woodmen's Excursion and Picnic.

A fine grove, boating, salt water bathing, music, dancing and good fellowship are assurances that the Woodmen of the World's outing of 1891 will be a success.

Thursday, June 21st, has been selected as the date and Burlington Beach, Lincoln as the location.

A special train carrying Woodmen, their wives, children, and sweethearts, relatives, and the Seventh Ward Military band, will leave the union depot at 8:30 a. m., reaching Burlington beach about 10. Returning it will leave the beach at 8:30 p. m.

A very low rate—\$1.10—has been secured. This includes admission to Burlington beach, as well as the railroad ride of 110 miles.

A bazar for the benefit of "The Scandinavian Evangelical Lutheran Bethany School and Young Ladies' Home," Thirty-third and Cummins streets, will be given at Patterson's hall, southeast corner Seventeenth and Farnam streets, Thursday afternoon, June 21, from 1 to 7 o'clock, and the following Friday and Saturday evenings from 7 to 10 p. m.

A great variety of fancy work and many other useful articles will be sold at reasonable prices. Admission 25 cents. Ice cream and cake served free. All are cordially invited.

There are a dozen ways of passing time pleasantly at Burlington beach, Lincoln.

You can sail, ride on a steamer, dance, row, bathe, listen to the music of the Seventh Ward Military band or take things easy in the shady grove that's within a stone's throw of the dancing pavilion.

The Woodmen of the World spend next Thursday at the beach. Better go with them. Tickets cost only \$1.10 and the special train leaves at 8:30 a. m.

COLORADO EXCURSIONS
Via Chicago, Rock Island and Pacific Railway.

On June 23, 24, July 21, 22, Aug. 10, 11. The Great Rock Island route will sell excursion tickets to Denver, Colorado Springs or Pueblo and return for \$15.00, tickets valid for thirty days for return passage. School teachers and others desiring to attend the Colorado school of science, philosophy and literature, July 2 to 27, can do so by leaving on the next excursion. The Rock Island is the only road that can carry you through the most beautiful scenery in the west, and a hundred other places too numerous to mention. For rates, sleeping car reservations and any other information call on Charles Kennedy, general northwestern passenger agent, or address 1602 Farnam street.

The Heavy Rates
Of the last few days won't interfere with the Woodmen of the World's excursion to Burlington Beach on Thursday next. Special train leaves the Union depot at 8:30 a. m., and tickets cost \$1.10 only.

The Fairies' Carnival.
"Can I sell you a ticket to the Fairies' Carnival?" asked a bright and beautiful little girl of 7 of the writer as he was smoking a cigar after dinner one evening during the past week. "Well, little one, tell me all about it and then we will see about the tickets afterward." Her blue eyes sparkled as she replied: "Oh! there are lots of children here, the smelters, all of them. We have the funniest costumes—yep, ever saw, butterflies, grasshoppers, fairies, gnomes, and all sorts of things. We come out and whirl about in the butterfly dance. You never saw anything so pretty in all your life. Now, please, sir, won't you buy some tickets for your family?" But we were not yet fully satisfied, so we asked the little girl what was to be done with the money. The ladies asked us to do this. You know the ladies? They are the Women's Christian association ladies and the Young Women's Christian association young ladies. They asked us to help them to get some money which they needed to help them and we said we would. The entertainment will be given in the Fifteenth Street theater Wednesday, Thursday and Friday evenings, June 27, 28 and 29, with a matinee Saturday afternoon, June 30.

Excursion Rates East.
For full information concerning summer excursions call at the Chicago, Milwaukee & St. Paul ticket office, 1504 Farnam street, or address J. A. NASH, General Agent.

Taken to the Pen.
Sheriff Drexel went to Lincoln yesterday, taking with him Hark Smith and Frank Webber booked for ten years each in the pen.

Smith was convicted of shooting with intent to kill, while Webber tried to rob a number of the residents in Walnut Hill, but was run to earth and captured by a woman.

A Glimpse of Fairyland.
What form of entertainment appeals so strongly to the public as those in which the children predominate? Who does not love to hear their fresh, childish voices in song?

And when an entertainment is offered that contains a beautiful fairy story, enhanced with bright, pretty music, elaborate scenery, costumed as the dainty dwellers of fairyland are supposed to be, with all the trappings and finery that is supposed to be worn in that mystic realm, then old hearts grow young again, and in spite of ourselves we show the enthusiasm of the youngsters and enter into the thing with all the zest of our youth.

And it is a good thing for us, too. No memories are so sweet as those bygone days of childhood. So let us lend a helping hand to make the "Fairies' Carnival" a grand success this time. This entertainment is to be a superior one in every way. There will be myriads of pretty fairies, a host of dainty little butterflies of every hue, graceful, stately sprites of the forest, the quaint gnomes of the forest, the royal guards of Prince Oberon, funny, grotesque frogs, grasshoppers, crickets, etc. Puck, the mischievous elf, the jester of the fairy court, and Moth, the despised miller, whom the pretty butterflies disown, will be important figures in the story. While Titania, the queen of the fairies, Arlequin, the clown, and the other characters of the story, will be important parts of the entertainment. There will be a hand in the story, and but it is quite impossible to describe this dainty, airy creation. It must be seen to be appreciated. It is held during the next few thousands east and west. It is built upon different lines from any juvenile production we have ever heard of. There is a certain crispness in the dialogue, a breezy run in its action, a certain dash of ginger and "go" to it that precludes the possibility of any one getting weary during the performance. We are confident that all this frequent visits at the rehearsals.

And it is quite a wonderful thing to see how so elaborate an entertainment is prepared in so short a time. The rehearsal is no excitement in the preliminary work. It is a quiet jog the children take. Every thing is rehearsed in fragments, so to speak. But today all is bust at the Fifteenth Street theater, where this beautiful affair is being put together for the first time. The orchestra is there, the stage hands are bustling. Mr. Thomas Kelly is welding his baton in a manner that shows how confident he is of the children he has been so arduously drilling in solo and chorus for some three weeks past. Prof. Chambers, lithic and alert, is watching with satisfaction the graceful evolution of every chorus that comes swinging into the stage at the proper time, and predominating all with a masterly command, is J. Edgar Owens, the creator of this charming opera. Mr. Owens has had years of experience in this work. He has brought the matter of big productions down to a system—a science. He also appears as Uglia, the ogre, the "bogey man" of the play, and his growl is quite eminently his own. But we might go on to a length of descriptions that lack of space would not permit of our giving. Suffice it to say that the Women's Christian association and the Young Women's Christian association will have much to be proud of in this production. It is a light, airy entertainment, well suited to this season of the year, and if they do not largely increase their exchequer next week it will be the fault of the public's failure to appreciate one of the prettiest entertainments ever given in Omaha. But we are confident that there will be no failure on the part of the public to the Fifteenth Street theater to overtop performance. It is to be hoped that the parents of children who are not participants will not fail to take them to the grand old Saturday afternoon noon. It is given in order that every child in Omaha can take a trip to fairyland at a low rate of admission. We hear that any child under 12 years of age can get a seat in any part of the house at this matinee for 25 cents. The evening prices are the same for children as for adults, 50 and 75 cents. The sale of seats will be held every morning at the box office of the theater and there will be a great rush for them.

You Will Miss a Treat
If you are not at Burlington Beach on Thursday, the 21st. The Woodmen of the World will be there in full force. Special train leaves the Union depot at 8:30 a. m., and tickets cost \$1.10 only.

Don't Imagine
You can't afford to attend the Woodmen of the World's excursion and picnic at Burlington Beach on Thursday, the 21st. The special excursion train leaves the Union depot at 8:30 a. m., and tickets cost \$1.10 only.

Going East Today?
Your choice of four daily trains on the Chicago & Northwestern railway. Two of these trains at 4:05 p. m. and 6:30 p. m. are vestibule cars, leaving at 10 p. m. Chicago early next morning.

Elite sleepers, dining cars and the latest reclining chair cars.

Call at the city office, 1401 Farnam street. The Northwestern checks your trunk at your house.

Seen the animals at Courtland beach?

LOCAL REHEARSALS.
At 10:30 o'clock last night a lamp, upsetting in a room occupied by H. P. Gray, Jr., 215 South Tenth street, caused a small fire. The loss is nominal.

Ezra Beeman pleaded guilty to the charge of selling liquor without a government license in the federal court yesterday. Judge Dundy fined him \$25 and costs.

Deputy United States Marshal Coble arrived in the city yesterday from Boyd county, having in charge F. J. Legatch, who is charged with selling liquor to Indians.

John Wood and John Robinson, waiters, engaged in a fight at Fourteenth and Dodge streets yesterday afternoon. Both were arrested before serious injury was inflicted on either.

Frank Holl was arrested last night on suspicion of having stolen a horse from the Gorge, the mineral palace, the smelters, at Pueblo, and a hundred other places too numerous to mention. For rates, sleeping car reservations and any other information call on Charles Kennedy, general northwestern passenger agent, or address 1602 Farnam street.

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THE OMAHA DAILY BEE, WEDNESDAY, JUNE 20, 1891.

RIGGE ON ELECTROLYSIS
Action of Electric Currents on Water and Gas Pipes is Explained.

WHY AND HOW DESTRUCTION IS BROUGHT
Results of Experiments in the District in Omaha Most Affected—Success of Remedial Measures in Several Cities of the Country.

Father Rigge gave an interesting lecture last night at Creighton college on "Electrolysis." The lecture was given at the request of the Young Men's Institute, and was listened to by about 200 people. It was illustrated with various electrical experiments, showing induction and conduction of electricity, and with pipes that had been eaten by electricity in the city. Father Rigge spoke substantially as follows:

Brass and iron have long been considered indestructible. But of late it has been found that the rails under heavy construction trains have collapsed. This has been caused by a minute insect eating the iron away. Later still, with the introduction of the electric motor, our water and gas pipes have been attacked. Both city officials and motor companies are interested in the removal of this evil.

There is no difficulty from an arc light plant because its alternate currents prevent any. Trouble arises, however, from a motor line, where a direct current leaves a power house on a trolley, runs through the wheels to the rails and is expected to return by these to the dynamo. It could return if the rails were insulated. But they offer so much resistance on account of rust, bolts, etc., that the current leaks into the ground wherever it is not insulated. This finds its way either inductively or conductively to the water or gas pipes and electrically disturbs them. To what extent depends upon the condition and material of the pipes. If we have two pipes of the same material, but one rusted or covered with a coat of paint, we have in reality two metals, and a moist ground will complete a battery.

Electrolysis is the theory of corrosion. There were on Nicholas street two pipes—one an iron gas pipe, the other a lead water pipe—both close together and parallel. After five years' service the lead pipe had to be taken up because it was corroded. It was replaced by galvanized iron pipe, but this had to be taken up at the end of three months on account of corrosion. When these pipes became attacked by the waste of electricity, the two metals in a moist ground, they formed a battery.

When the electricity leaves a positive pipe, which is generally the larger one, it eats into it and carries parts of the metal to the negative pipe. This eating away forms spots which become larger and larger and finally so weaken the pipe that it cannot stand the pressure and bursts. Electrolysis is going on in a fearful rate between the two power houses on Nicholas street. This district is comprised in a radius of 2,000 feet, extending from Lake to Burr streets and from Sixteenth to Twenty-fourth streets. In this district some pipes carry a current able to heat a thick wire so that it could not be held in the hand.

WHAT EXPERIMENTS SHOW.
In order to show that electrolysis is not the effect of salts of the earth, ammonia, hydro-chloric acid or alkali, but of electrical action, I have carried out a series of experiments. I attached one to the positive pole of a battery of small voltages and placed another near and parallel to it. In two weeks the last was eaten out. I placed another piece in ground perfectly soaked with ammonia and other acids and salts. I took out the iron perfectly smooth, except from rust. Therefore, electrolysis was produced by electrical action. The acids will deacidate metals only in a smooth process and not in pitting. The acids will attack, and usually the larger, will always be attacked, while the negative ones are always smooth and little attacked.

One locality of ground is often more highly excited than another. In the district named above spots of greater or less extent have been picked out on pipes by the current and are finally eaten out of the shape of small nodules. These nodules are remarkably light, giving a very light specific gravity. This is some fraction of 2, with that of cast iron 7.5 to 8. What has become of this iron?

The street represents a great plating battery—from the water mains through the moist ground to the pipes. The current is the electricity will flow from the positive to the negative pole and will carry pieces of metal from one to the other or scatter them on the ground. Both carry materials. The first carries pieces of iron from the one pole to the other or scatters them on the ground. The second carries the iron to the negative pole, where it is deposited. A strong main current passes from the positive to the negative poles, but a weaker current also runs from the negative to the positive pole. Both carry materials. The first carries pieces of iron from the one pole to the other or scatters them on the ground. The second carries the iron to the negative pole, where it is deposited.

To account for the carbon is more difficult on account of a lack of sufficient data. The following explanation is suggested: The current is more active where it is going to the negative pole, and the carbon is carried in the iron to flow toward that point and combine together under the great heat. This appears to be a good explanation, but why may it be traced to the molting? The nodules are lined with charcoal. When the iron is poured into them it breaks off some, and this forms a lump, and this lump consequently contains a larger amount of carbon. What is the remedy for electrolysis? It is suggested that the trolley be reversed from positive to negative making an alternate current, but this is not safe or feasible. Insulation of pipes by paint, asphalt or covering has been tried, but is too expensive. To be successful the whole line must be insulated. In Boston, copper plates have been sunk in the ground, but this is too expensive. The most practical plan is to unite the rails with one inch wire wherever the moist ground threatens to eat the electricity. There must be good connection between the rails and the dynamo in the power house. All pipes under the ground should be connected with the rails. This has been tried and the evil much reduced. In Brooklyn rails have been connected with the water pipes in length and electrically welded together. Changes of temperature in summer and winter do not contract or expand them. Experience shows that they become wider or thicker.

The double trolley system overhead has been generally abandoned on account of difficulties of construction. The double underground trolley system has given satisfaction in Chicago and Washington. It has saved 20 or 30 per cent in power.

See La Rose Bros. at Courtland beach.

DIED.
Notice of five lines or less under this head, five cents; each additional line, ten cents.

GALLAGHER—Amanda, at 5:30 p. m. Tuesday, June 18, 1891, aged 35 years, at her late residence, 104 South Twenty-ninth street. Funeral notice later.

Awarded Highest Honors—World's Fair.
DR. RIGGE'S
Baking Powder.

The only Pure Cream of Tartar Powder.—No Ammonia.—No Alum.
Used in Millions of Homes—40 Years the Standard.

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One locality of ground is often more highly excited than another. In the district named above spots of greater or less extent have been picked out on pipes by the current and are finally eaten out of the shape of small nodules. These nodules are remarkably light, giving a very light specific gravity. This is some fraction of 2, with that of cast iron 7.5 to 8. What has become of this iron?

The street represents a great plating battery—from the water mains through the moist ground to the pipes. The current is the electricity will flow from the positive to the negative pole and will carry pieces of metal from one to the other or scatter them on the ground. Both carry materials. The first carries pieces of iron from the one pole to the other or scatters them on the ground. The second carries the iron to the negative pole, where it is deposited. A strong main current passes from the positive to the negative poles, but a weaker current also runs from the negative to the positive pole. Both carry materials. The first carries pieces of iron from the one pole to the other or scatters them on the ground. The second carries the iron to the negative pole, where it is deposited.

To account for the carbon is more difficult on account of a lack of sufficient data. The following explanation is suggested: The current is more active where it is going to the negative pole, and the carbon is carried in the iron to flow toward that point and combine together under the great heat. This appears to be a good explanation, but why may it be traced to the molting? The nodules are lined with charcoal. When the iron is poured into them it breaks off some, and this forms a lump, and this lump consequently contains a larger amount of carbon. What is the remedy for electrolysis? It is suggested that the trolley be reversed from positive to negative making an alternate current, but this is not safe or feasible. Insulation of pipes by paint, asphalt or covering has been tried, but is too expensive. To be successful the whole line must be insulated. In Boston, copper plates have been sunk in the ground, but this is too expensive. The most practical plan is to unite the rails with one inch wire wherever the moist ground threatens to eat the electricity. There must be good connection between the rails and the dynamo in the power house. All pipes under the ground should be connected with the rails. This has been tried and the evil much reduced. In Brooklyn rails have been connected with the water pipes in length and electrically welded together. Changes of temperature in summer and winter do not contract or expand them. Experience shows that they become wider or thicker.