

results from ignorance and neglect, and from the indirect way in which the cost, resulting from waste, falls on the individual in consequence of the system of charges for domestic water.

An improvement can only be effected by a change in the method of assessment of charges for the water which passes through the surface pipe of the consumer. So long as these charges bear no relation to the quantity of water delivered, being dependent either on the rental of the premises, on the number of rooms in the house, or on the number of water taps, or other water appliances, the consumer has no inducement to use water economically, or provided sufficient water is delivered for his purposes to keep the apparatus in such repair as to avoid waste. The quantity of water which passes through his water fittings, whether wasted or not, does not effect his water rate. Thus the system of charge which permits an unlimited consumption to each householder in return for a limited and fixed payment, is prejudicial to the community. Works constructed for a definite population on the basis of an ample supply per head, which would suffice till the population contemplated in the design is reached, become rapidly insufficient in consequence of the unjustifiable demands, from the satisfaction of which there is no escape, and a premature enlargement of the works is necessitated. This process repeats itself continuously, involving additional works out of all proportion to the actual requirements and increase of the population.

The meter system has given perfect satisfaction to all consumers, where it has been applied. The general feeling is that they are only compelled to pay for what water they use, and the only way that this can be had is by a correct system of meters, and we would recommend the adoption of a more general use of the meters, and particularly in all places where large quantities of water are being used, or are likely to be used, and also the adoption of a regular schedule of meter rates to be charged, and we are satisfied that by the adoption of such a system, it would soon prove its economy to this department, and reduce the large quantity of water which is constantly running to waste to a minimum.

Advantage of Good Roads.

The Charlotte, N. C., Observer quotes a prominent farmer of Mecklenburg county as expressing the opinion that Charlotte's growth and improvement are largely due to the roads leading to the city, and saying that lands in his section had increased much in value in consequence of the better roads. He mentions two tracts which were bought last year, one for \$18 an acre, which was sold this year for \$25 an acre; the other for \$18 per acre, which sold for \$30. These figures serve but to strengthen the general belief that good roads do much for the towns with which they afford ready communication.

Municipal Lighting.

The question of whether street lighting plant should be owned by the municipality or by a private company is one which has received considerable attention, and is worthy of careful consideration.

Although it has been less than six years since the field of electric lighting was first entered by the municipality, more than one hundred and twenty-five cities in the United States now own and operate plants. So far this movement has been confined chiefly to the smaller cities, but the larger ones are beginning to discover that the element of size is not necessarily a bar to their entrance upon the same course. Chicago at a very recent date was operating successfully seven hundred and twenty-five arc lamps and the sphere of its operations in this direction has been growing rapidly. The mayors of New York, Boston, Philadelphia, Baltimore, Atlanta, and other places have discussed in their messages the advisability of the assumption by the municipal government of these public works. The following schedule shows the price paid by a number of cities and towns in Ontario for electric street lighting:

Place.	No. of arc lights.	No. of Nights Allowed for Moonlight.	Cost per Night.
Barrie	33	72	\$0 23.8
Kingston	100	96	30
Brockville	29	96	35
Hamilton	348	none	28
Brantford	35	none	23
Guelph	90	72	24½
Peterborough	77	65	25
Stratford	73	90	18
Belleville	39	96	35
Toronto	1000	none	29.7
Chatham	56	85	23½
Galt	39	65	22
Ottawa	331	85	23.2
Windsor	108	none	14½
Woodstock	56	to midnight	
Owen Sound	30	72	30.7
London	216	60	25
St. Thomas	31	96	28

The above information has been obtained from direct inquiry and is based on official statements coming from the various cities and towns. Of the above list Windsor is the only city owning and operating the plant with an all night and every night service, the cost is \$52.92, while for the same service it will be observed places lit by a company pay almost double. As Windsor is the only city in this list which owns and operates its plant, it might be considered unfair to take it as a single comparison, but in looking over the American government report on gas and electric lighting, we find that the average cost on each arc light owned and operated by twenty-three cities is \$53.04. While selecting from the parts of the country in which the twenty-three works are situated, private plants having the same arc light capacity, we find that the average cost per light per year of arcs operated by private companies is \$106.01; this price is only \$2.79 greater than the average charged by all the private companies, large and small,

in twelve states covered by the cities given in the report, and therefore cannot be considered as out of exceptional conditions. These comparisons of municipal and private plants, of equal arc light capacity, and subject to the same territorial conditions are the fairest that can be made, excepting perhaps that between the cost of the same light under the two systems.

Many of the municipal electric lighting plants in the United States are operated in connection with the municipal waterworks and this could also be done in Canadian towns and cities and is one of the chief reasons why cities furnish themselves with light more cheaply than private companies can perform this service. The general practice, a few years ago, was for private companies to own the municipal water supply, but this has been found to be very undesirable and now it is almost the exception to find the municipal waterworks in the hands of a private company. By uniting these two services, water and light, the running expenses of the plant are made comparatively light. One building often suffices for both water and light plants, and the same power is utilized. Several cities have found it necessary to add only two or three employes to the waterwork's force. Then the municipal plant is not operated for profits, while the prices of the private companies are regulated to yield a return for the investment. Often the item of profit represents the only difference between the cost of a municipal and private electric lighting and this generally is a very large item, as evidenced by the marvellous reduction made by the private company in their contract for the city of Toronto a few weeks ago, when they were confronted by a determination on the part of the municipal council to install their own plant, and it was shown by the tenders that the cost of a new plant was well within the estimates of the city engineer and that the citizens must assume that the remainder of his estimate was correct and that by such installation they would be saved the large amount which he estimated they would in consequence of the change.

Electric lighting is one of the services, the rates of which are practically precluded from the regulating influence of competition on account of the limited number of companies that can operate in the same territory at one time and natural competition is made impossible. Rival companies occupying the same field may induce a temporary lowering of the price, but the causes that render competition inoperative make easily possible a combine of one, two or three companies and no one needs to be told that in the end, if not at the time, the consumer pays for the multiplication of engines, dynamos, lines and linemen.

Dust and mud are the alternative conditions of dirt roads, with all too brief intermediate stages, when they are for a few days about right for comfortable driving.