

MUNICIPAL DEPARTMENT

MUNICIPAL ELECTRIC LIGHTING.

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The question of municipal electric lighting is one which, every day, is assuming more and more importance; and in view of the controversy that has arisen, and the arguments presented, it is one which ought to be seriously considered by every progressive community. No great public movement, of this or any other day, has been made without encountering violent opposition from those whose interest has laid in leaving things "as they are." Capital preys upon the necessities of mankind, and places obstacles in the way of proper and natural evolution; which forces, however, inevitably prevail ultimately. The granting of an electric lighting franchise, more especially in small communities, is in its very essence the conferring of a monopoly upon an interested corporation or individual; and its terms, conditions and privileges should be very carefully considered by those to whom is entrusted the guardianship of public rights and interests. For small communities of from 1,000 to 5,000 inhabitants, the arguments in favor of municipal ownership assume greater force; and it would appear to be almost a necessity that such should manage their public services—water supply and electric lighting—if only for the simple reason that such small fields are not greatly attractive to private capital; the consequence being that small towns must do their own electric lighting or go without. It is assumed that electric lighting is to be desired as being a better illuminant than either gas or oil, and being so, it is quite an object to be able to avail oneself of the superior service. Most small towns of the size mentioned are particularly favorably circumstanced for the embarking in such an undertaking, in that they generally own and operate their own water works system, and consequently have already employed a staff of men accustomed more or less to machinery. For them to go into electric lighting does not mean anything like the addition to staff and salaries that a private company would require, nor would they require to greatly increase their already installed boiler capacity. They also already have a building, and their extra bookkeeping will cost nothing. It is plain, therefore, that such towns neglect their advantages in not owning their electric plants. Little towns of any size, however, whether or not they have a pumped supply of water, can always operate a municipal plant and make sufficient profit out of residential and store lighting to pay for the entire cost of the system, and throw the street lighting in as a clear gain. This is not merely a theory. It is done, actually, and instances can be pointed to, which prove it. The advantage of municipal ownership are so

clearly recognized that civic plants are being installed in every civilized country, in increasing numbers. In fact, in Great Britain to-day, no franchises are given to private corporations, that do not include a clause providing for the purchase of the plant (both lighting and street cars) by the municipality after a certain term of years, if they so desire it. The installation of an electric lighting and power plant being a matter which requires careful consideration; and one in which a great deal of expense and trouble can be caused by the inexperience of those into whose charge the designing and operating of the system is given; it is thought that a series of short articles, dealing in a concise and comprehensive manner with the above problems, will be of more than interest. It is proposed, therefore, in subsequent numbers, to take up and carefully consider, all the various factors that contribute to the success, and more especially, to the economy, of its operations; and briefly, to consider the most efficient methods for the distribution and utilization of current, and the proper system of book-keeping and general management of an electric lighting or power business.

IMPROVED METHOD OF CLEANING RESERVOIRS.

Considerable advantage is claimed for an improved method of cleaning which has been introduced in the construction of the reservoirs which supply Omaha and Denver with water. As described the bottom of the reservoir is made to form several large pockets at the lowest points, in which are located blow-off valves, and through these, water or sediment of any description that may have collected, is discharged to any convenient point. The blow-off valves are of the disk pattern and are operated from small hydraulic cylinders over them, the valve stems, in each case, being continuations of the piston rods, work from the cylinders. Water under pressure is supplied underneath the pistons by pipes running along the reservoir bed, and the cylinders and pistons are so proportioned for the available pressure that, when the water is admitted, the total pressure under the piston is sufficient to raise the blow-off valves from their seats and allow the escape of water and mud from the reservoir. From each of the blow-off valve openings there is a 24-inch pipe running down vertically some fifteen feet, connecting with the main discharge pipe.

A COLOSSAL DRAINAGE SCHEME.

A drainage scheme on a colossal scale has been brought to the attention of the California Legislature for its endorsement. It is proposed to reclaim all the lowlands of the Sacramento Valley north of the Montezuma hills, at a cost of \$9,000,000, to meet which the entire district must be bonded. One has to go to Holland to find a reclamation work of equal magnitude. A powerful lobby, managed by a United States Senator, is said to be behind the bill providing for legislative sanction of the enterprise.

The plan more in detail calls for a by-

pass canal on the west side of the Upper Sacramento river to carry off the foothill water. Another by-pass canal on the east side of the river will carry the river flood-water that has always proved to be more than the channel could contain. From the confluence of the Feather and Sacramento rivers a great channel 4,000 to 4,500 feet wide will take the water all the way to Rio Vista, and thence to Suisun Bay and the ocean. These canals are designed to reclaim more than 1,000,000 acres of Sacramento Valley lands, now altogether or at times under water.

It is the opinion of the State Commissioner of Public Works that the result of the work contemplated in the bill will be to increase the assessed value of Sacramento Valley lands by \$50,000,000. The canals will not be excavated, as it is intended merely to build enormously strong levees on both sides of the proposed channels, leaving room for the flood-water to run between. There will be hundreds of miles of enormous levees if the plan is followed out, as levees will be thrown back from the canals at various points for the purpose of carrying the flood-waters into the main water-courses.

PRIMITIVE FIRE ENGINES.

The oldest known fire engine for pumping water is probably the one mentioned in the "Spiritalia" of Hero, about 150 B. C. This engine, it is said, was contrived with two single-acting pumps with a single beam pivoted between the two for working the plungers. The streams of water united in a single discharge pipe and passed up a trough having an air chamber, and out of a nozzle which might be turned in any direction as desired. Fire engines appear also to have been used extensively by the early Romans, who furthermore organized regular fire brigades.

In the early part of the sixteenth century a fire engine known as a "water syringe" was introduced, which, in a measure, resembled the modern forms of fire engines. This was mounted on wheels and the water was pumped by levers. This form of engine was very generally used in Germany. In England about the same time large brass syringes were used. These held several quarts of water and were operated by three men, two of them holding the syringe at each side with one hand and directing the nozzle with the other, while the third operated the plunger. It was necessary, after having discharged the water from the syringe to refill it from a well or cistern near the fire or from buckets. The syringes were later fitted to portable tanks of water. The first successful fire engine was probably the Newsham engine and this was the pioneer of manually operated fire engines. The pumps in these engines were built on many different designs, but in most cases they were operated by levers. Fire engines similar in form to the Newsham engine were in use up to the year 1850.

The death is announced on the 27th inst. of Henry Francis Ellis, City Clerk of St. Thomas, Ont., at the age of 78 years.

Mr. T. D. Galloway, Town Clerk of Warton, Ont., died on the 23rd of April, aged 61 years. He had held the position since the incorporation of the town in the year 1880.