MUNICIPAL DEPARTMENT

CORNWALL WATERWORKS ARBITRATION.

A despatch from Cornwall dated July 13th says: The corporation took possession of the Cornwall Water Works Company's system and plant this afternoon, after having deposited in the Ontario Bank here to the credit of the company the sum of the award made by the Board of Arbitration, with interest to date. Mr. James Strickland was appointed superintendent, at a salary of $60 per month. The company's employes at the pumphouse barred the door, and refused to admit the new superintendent. Chief Cameron and three policemen were sent for, and forced their way through a window and opened the doors. The company threatens to appeal from the award of the arbitrators. The town officials are issuing a circular, warning citizens not to pay the water rates to the company's officials for water after this date.

FILTRATION OF SEWAGE EFFLUENTS THROUGH COAL.

A noticeable paper read before the Midland Counties District meeting of the English Association of Municipal and County Engineers last month was that by Dr. George Reid, Medical Officer of Health, Staffordshire County Council, describing some experiments made with common coal as a filtering medium for effluents from artificial sewage disposal works. It seems that a year or two ago Mr. Garfield, the Manager of the Wolverhampton Sewage Disposal Works, noticing that a pool of foul water that was leaking away through a heap of coal slack, emerged from the slack in a clear limpid stream, was led to construct a small filter of fine coal in order to try its effect on the Wolverhampton sewage effluent. Analyses from the coal filter were so satisfactory that Dr. Reid, who was then experimenting on the merits of different methods of artificial sewage disposal, constructed three small experimental coal filters, each having an area of 16 square yards.

In constructing the coal filter Mr. Garfield recommends a thickness of filtering material of 5 feet, distributed as follows: On the top of the effluent drain pipes is put a layer of 6 inches of coal in size about that of a ½-inch cube. This layer is "blinded" with one of ¼-inch cubes, above which comes a 9-inch layer of ⅛-inch cubes and on top of that a 21-inch layer of 1-16-inch cubes. The top course is a 2-foot layer of coal dust that has passed through a 3-16-inch mesh, the fine dust not being removed as in the other layers.

The best results have been obtained by turning the sewage effluent on to this filter at the rate of 1,000,000 gallons per acre per day for a period of 12 hours and then allowing 12 hours for æration. As in other artificial filters, the nitrifing property increases with time, but from the first the filter is said to possess high purifying powers apart from nitrification. The filters constructed by Dr. Reid were only 42 inches in depth instead of 5 feet, but the sewage treated was ordinary weak domestic sewage from a town with only a few water-closets and which had been treated with precipitation by alumino ferric and lime. The sewage was also largely weakened by rainfalls of considerable duration.

DISPOSAL OF GARBAGE.

A writer in the Toronto Globe, on the subject of the disposal of garbage, says: During my recent visit to Great Britain I was made acquainted with the methods followed in working over a dozen systems of disposing of sewage in large towns. In England they have been experimenting and spending large sums of money in trying to find out some simple process for over thirty years. It is an easy matter to clarify sewage and take out the heaviest dirt similar to the process at Hamilton, but a hard one to extract the chemical poisons and dangerous microbes Moreover, the precipitants generally used to compel the dirt to separate from the water nearly always leave an ingredient in the clarified water that sets up a fermentation after a few days that causes putrefaction, and creates more danger than if the sewage entered the streams in the raw state. So it is necessary to either purify the sewage water properly or else let it enter the fresh water untreated. So nearly all the sewage works in Great Britain clarify the sewage first, then purify it by passing the clarified fluid through a good filter or through farm lands. But our climate would be too severe in winter to purify sewage by irrigation through land, and it would be altogether too expensive at all times.

It has always been held that charcoal is the proper filtrate to use in purifying sewage, but its use was barred on account of the cost. At present the cost of purifying sewage in the Old Country is from 40 to 75 cents per head of contributory population, and to go higher would not be tolerated. About six years since a person patented a very simple method of creating a suitable charcoal at a nominal cost, and using it to clean sewage at a cost of less that twelve cents per head. I visited a works constructed under the patent, and was amused with the simplicity and efficiency of the system, and the purity of the effluent. It requires no pumps, sludge presses, or other expensive machinery. One man at night and one for day duty is all that is necessary to handle the working part with sewage from 20,000 people. The first expense in plant is small compared with other sewage disposal plants.

The method used is that known as the Carbonized Refuse process of purifying sewage. The sweepings from streets, the garbage from dwellings, and any poisonous material, excreta, etc., that should be destroyed, is placed in a muffled kiln or destructor, and the clinkers and ashes raked out of the furnace are used to filter the sewage. The largest clinkers are placed at the bottom of a concrete tank, then a layer of smaller, and again another layer of still smaller, the three layers being covered by eight inches of the finest ashes or charcoal powder taken from the furnace. This is the filtrate that cleans and extracts all the poison from the sewage, and discharges a bright, sparkling stream of pure, tastleless water. The sewage arriving from the town is run through a sieve, then through a roughing tank composed of coke or broken clinkers, then it overflows onto the filters. In about three days the filter will be covered with about two inches of solid sludge, which is shovelled off along with about two inches of the charcoal, and carted away for manure and it is said to be equal to any patent manures sold. The advantages of the system are that it works by gravitation, only requiring about four feet fall from the beginning to the end of the process. It continues requiring attention only to clean the sludge from the surface of the filters, and attend the fires of the kiln or destructor. The works can be left to care for themselves for several hours at a time until the fires need stirring. No precipitant is required except dye water is filtered, because the charcoal is strong enough to extract everything out of domestic sewage.

By this method two nuisances are disposed of. The garbage and filth of the towns are disposed of, and all danger to health is destroyed at about one-third the cost of other systems. The kilns or or destructor furnaces require no other fuel but the garbage they burn or carbonize; there is nothing at all to buy, and there is a valuable manure to sell. Moreover the wages are very small.

Mr. W. F. Van Buskirk has been appointed city engineer of Stratford, at a salary of $1000.

Mr. C. H. Wallace has been appointed first assistant city engineer, at Hamilton, at a salary of $1,000, and Mr. J. R. Heddle second assistant engineer, at $600.

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