estimated that there were three hundred and fifty men idle, which would mean a loss of $28,000 to members of the Plasterers' Union.

Besides the plasterers some two hundred and thirty helpers were thrown out of employment, which meant a loss of $2.60 per man per day, or a total loss to the helpers of $12,558. Directly the wage bill for July was decreased by $40,558, and indirectly very much more. Other trades were idle, because their work was dependent upon the plasterers. The carpenter, the painter and the lather each suffered with his fellow.

The difficulty has been settled, and the men return to work having gained their point. They lost eighty dollars to gain eighty cents a day, or in one hundred working days they will have made good their loss. By what happens in November one will be better able to judge whether they have won out in the struggle.

BRITISH COLUMBIA SHIPPING.

During 1907 British Columbia's shipping industry added more tonnage than during any of the five previous years, and was only surpassed on two previous years: in 1898, when 12,228 tons were added, and 1901, when 7,728 tons were added. The following table gives the growth for the last six years:—

	No. of Vessels.	Net Tonnage.
1902	36	2,550
1903	56	3,494
1904	48	2,362
1905	51	3,536
1906	82	2,774
1907	97	7,115

British Columbia now stands second in the Dominion in list of vessels registered and third in tonnage added.

EDITORIAL NOTES.

Canada has not yet completed her railway system. The railway subsidies granted by the Dominion Parliament this month provide for aid to almost four thousand miles of road. The re-votes include twenty-six roads, representing 1,678 miles, and new subsidies were granted to forty-four roads, aggregating 2,150 miles. To this must be added the bond guarantee in Western Canada, covering 609 miles more, and anticipating the expenditure of $8,000,000. The re-votes amount to over $5,000,000 and new subsidies to $6,000,000.

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In this issue we conclude the series of articles on "Sewerage and Sewage Disposal," by Mr. T. Aird Murray. The questions Mr. Murray has discussed are of interest to all engineers, and the lucid manner in which he has presented the subject has made the articles of great value. In connection with the series Mr. Murray writes:—

"By means of this treatise it is my endeavor to bring the whole question of town drainage and the purification of sewage in a terse and concrete manner before those authorities, engineers and others to whom the subject is a new one. It is not pretended that the information given is by any means conclusive. There are many variations and features which can be found described in more pretentious works on the subject. I am indebted for much information on American sewage disposal to Messrs. Rafter and Baker in their extensive work on 'Sewage Disposal in the United States.'

"The principal information which I give is based on an experience of over twenty years' connection with this work in Great Britain, and I recognize that certain precautions will have to be taken in a country such as Canada to guard against severe frost.

"I shall be glad to give any further information at any time and answer enquiries arising out of these pages upon receipt of a letter addressed to the offices of the 'Canadian Engineer.'"

SOME THINGS A POWER USER SHOULD KNOW ABOUT COAL.*

E. G. Bailey.
Arthur D. Little Laboratory.

The majority of manufacturers are dependent upon the combustion of coal for the operation of their mill. The man who is responsible for the continuous and economic operation of the plant should know: (a) Where he can always get coal when he needs it. (b) Where he can get coal of such character and quality that his plant will not be crippled for lack of steam. (c) What coal is the most economical for him to burn. (d) How to convert a large percentage of the heat energy of the coal into useful work.

(a) It is an exceptional circumstance when a manufacturer does not have many kinds of coal offered him at competitive prices. But at times of strikes or delays in transportation he is sometimes compelled to seek coal and pay whatever price is asked. In placing a contract this point should be kept in mind,and whenever the difference in price is not too great, preference should be given to the company that is most able to keep you supplied with coal at such exceptional times. If you expect fair treatment from the coal company you must treat it fairly by living up to your part of the contract, whether the price falls or rises during the continuance of the contract.

When plants are at any great distance from the mines it becomes necessary to store a considerable quantity of coal. This involves additional expense due to the extra handling, value of storage space, and loss of coal, both mechanically and chemically. The loss due to oxidation or weathering of coal not only reduces the calorific value of the coal, but as the temperature of the pile rises, the oxidation becomes more rapid until the ignition temperature is reached, and much additional labor and expense is necessary to prevent the burning of the coal and often the destruction of other property. There are many theories as to the cause of spontaneous combustion in coal piles, and several remedies have been tried with more or less success. Storing coal under water seems to be the only method of absolute prevention. Sulphur is generally referred to as the cause of spontaneous combustion; but each per cent. of sulphur, if burned completely and if no heat radiate from the pile during the slow combustion, would raise the temperature of the pile only 200 degrees Fahrenheit. Many cases of spontaneous combustion occur in piles of coal that contain less than one per cent. of sulphur, and analyses of coal from heated piles show that only a small percentage of the sulphur has been oxidized. Some heat must be radiated from the pile, and a temperature considerably above 200 degrees Fahrenheit is necessarily reached. Should the sulphur exist in the form of pyrites, and both the iron and sulphur oxidize, the heat generated would not be great enough to cause the temperature of the pile to rise as high as 550 to 600 degrees, which temperatures have been reached before the coal really ignited. Excessive moisture may play some part in causing spontaneous combustion, but exceptions to this are many. The height to which the coal is piled is generally considered a very important factor, but frequently the hottest part of a pile twenty feet deep is within three feet of the surface. In one case a pile of coal ten feet deep took fire about six feet below the surface, and in another part of the same pile the coal was thirty-five feet deep with no sign whatever of heating. Some coals store better than others, the reason for which seems to depend upon its physical structure rather than the chemical composition.

* Read at the National Association of Cotton Manufacturers, Boston.