In such cases it would certainly be a great advantage to have this waste land producing valuable timber, as such land will always grow trees if the proper species be chosen.

The policy of reforesting our waste lands has many arguments in its favor. It will pay as a financial investment, assist in insuring a wood supply, protect the headwaters of streams, and provide breeding ground for wild game, as well as removing great areas of waste, sandy land and converting them into profitable forests.

## STREET LINES.

We note in a recent issue of one of the local papers of Welland that complications have arisen in connection with the adjustment of street lines in that town. New surveys have been made on many of the streets, and these surveys do not check with the old lines by some four feet, necessitating a change in sidewalks and in many buildings erected.

This is the condition which practically all towns of comparatively old standing, which have come to a point of quick development, must undergo. When towns are small and property of little value, true lines and locations are not important, and as a result the original points are lost or destroyed. It is a lesson, however, that street lines should be laid down accurately and well-referenced with monuments when the towns are small, for endless trouble and complication will be saved afterwards if this is done.

We note that the councillors of Welland questions the idea of accepting the new survey, but it seems to us that in such a case as this, considering the rapid growth there, that it would be much better to lay down an accurate system of base lines for the town which would form a basis for extension in the future.

## EDITORIAL COMMENT.

Hamilton has been undergoing a thorough overhauling in connection with its sanitation. Dr. Roberts, the Medical Health Officer, has had a large corps of inspectors at work since the spring on a house-to-house campaign. As a result, sanitary conditions have been greatly improved.

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Common councils and boards of aldermen sometimes make strange rulings in regard to things electrical. Not many years ago, when accidents from falling trolley wires were more common than they are now, an alderman in Brooklyn moved that the street railway companies be compelled to insulate their overhead trolley wires so as to make them harmless in case they should break and fall into the street.

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The city of Buffalo is a step ahead of Toronto in the accommodation provided to street car passengers. Beginning next Sunday, street cars for the first time will carry signs, "Wait for the next car," when a car is filled. This means that an official limit has been placed at the number of passengers that the street car may carry. The largest number of passengers that can be accommodated is eighty-three, only thirty allowed standing by city by-law. Philadelphia has reached the stage where every passenger must have a seat. Buffalo has taken a step in the right direction, and it appears as though the sentiment in Toronto was becoming such that in the near future they will follow this example.

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The central electric-power-station idea is becoming more and more important in mining from year to year. Whether or not these power plants are established to serve a number of mines of a single company with electric current, or as custom plants, selling current to independent mines, the result is the same—greater economy of operation. Electric power, owing to the ease and economy with which it can be transmitted long distances and over all conditions of surface topography, as well as underground, is especially adapted to operating mining machinery. Where electric power is available the necessity of installing a local power plant at a mine may be avoided, an important item for the small operator with limited capital.

## CHICAGO TESTS OF EMSCHER TANK.

The Emscher tank formed the subject of a very complete paper read before the Boston Society of Civil Engineers by Mr. Chas. Saville—probably the most complete description which has yet been given of the tank and also of the Emscher drainage district and the work being carried on by it. This paper was discussed by a number of prominent sanitary engineers and chemists and brought out several interesting items of information concerning not only this tank but other methods of sewage treatment. Among those of special interest were a statement concerning the experiments conducted with such a tank at the sewage testing station of the sanitary district of Chicago and a description of a sludge disposal plant at Kings Park, N.Y.

The former was by Langdon Pearse, who has charge of the Chicago testing station. The experimental Emscher tank there is built of wood, approximately 7 feet 6 inches inside diameter and 16 feet 1 inch working depth. The effluent from a grit chamber containing an average of 100 to 200 parts per million of suspended matter requires at least a two-hour period for settling, with an average vertical velocity of less than 3½ feet per hour. At this rate the average removal during the month had been as high as 55 per cent. reduction of suspended matter with 152 parts per million in the influent, which had occasionally reached 65 per cent. on two-day tests with suspended matter about 200 parts per million. The average rate of accumulation of sludge has been about 2 cubic yards per million gallons, 90 per cent. of water. The capacity of this sludge chamber is estimated at one year, although it is not probable that so much storage would be required in an actual plant.

From observations with this tank Mr. Pearse was strongly of the opinion that the separate digestion of sludge in separate tanks is in itself not a solution of the sludge problem, and if carried out on any large scale such tanks would prove a great nuisance. The success of the Emscher tank, to his mind, lies in having a separate compartment for the digestion of sludge, to which the increment of freshly settled suspended matter is coming every moment. If the sludge accumulation of a reduction basin is blown out into a sludge digestion tank whenever septic action begins to develop, or even at more frequent intervals, a large mass of partially digested sludge is thoroughly stirred up each time; moreover, violent gas production will ensue in warm weather with the consequent dissemination of the settled matter through the liquid. Another objection to the separate sludge digesting tank is the difficulty of disposing of the supernatant