hotels, halls, and churches the charge is 35c. per month. When ten or more lamps are installed, the current is supplied on a meter basis if desired at the rate of 13c. per thousand watts. On all these rates there is a discount of 20 per cent. for payment within ten days of presentation of the bill. Fifteen cents a month is the rental charge for the meter. The charge for power is $15 per horse-power per annum.

The population of Orillia is a little over 5,000.

THE GRAND TRUNK PACIFIC.

As briefly announced in last issue, the Government's arrangement with the Grand Trunk Pacific Railway Co. for the building of a new Canadian transcontinental line have been laid before the House, and has been discussed by both advocates and opponents. Nothing has been brought out in the discussion that has weakened the claim of the Canadian Engineer that the great work should be undertaken and maintained by the Government. As Mr. Blair maintains, it is only by such ownership that the country can secure the full benefit of the most reasonable rates, and the best terms in making connections with other roads in the future; and only by such ownership can it reap the full benefit of profits that will accrue as the West develops and the line becomes valuable. The Government ownership of railways has been found to be good policy in South Africa, in India, and in Australia. Readers of Sir Charles Dilke's "Problems of Greater Britain," will find a high testimony to the public spirit and enterprise of the Australian Government in developing a system of railways which have yielded dividends for the public benefit and yet have enabled people to travel throughout those great colonies at a penny a mile—about a third of what is now charged in some portions of Western Canada under company ownership. The Government railways of India are one of the most valuable of state assets, and afford cheap rates while producing a good revenue. In South Africa—notwithstanding the fact that the railways are all narrow gauge, the rolling stock poor in hauling capacity, and the construction in several instances extravagant in cost and bearing the burden of serious faults in administration—the state railways in every instance have been revenue producers. In the case of the Orange Free State, the railway, during the long administration of President Brand, was the mainstay of the Government revenues; while the railway operated by the Netherlands Co. in the Transvaal was considered a gold mine richer than any in the Rand. The railways of Natal and the Cape Colony are all Government lines and in good years have yielded an annual dividend ranging from three per cent. to eight per cent. for the past quarter of a century. For a transcontinental line, the best solution of the problem would be a state-owned road running across the country far enough north of the C.P.R. to create a new sphere of traffic and give access to the lands now being reached with difficulty by the swarms of new settlers, and incidentally near enough to James' Bay or Hudson Bay to afford an outlet for grain by those waters, as well as by the Great Lakes to the south of the main line. Instead of making a second political road through the Maritime Provinces, such a line should reach tide water by the straightest and nearest route, which would be across northern Quebec to a port created on the Gulf of St. Lawrence or the coast of Labrador. By this plan not only would the greatest amount of new territory be opened up for settlement, as a direct result of the road, but the shortest route would be created for the commerce between Europe and Asia, which is one of the other great purposes of such a trunk line.

If, however, the Dominion Parliament decides that the road is to be built by private enterprise, then some arangement with the Grand Trunk will give the best results to the public, for the reason that that system has the largest number of ramifications, and can give direct access to the West to the greatest number of cities and towns in the East. As a matter of broad policy, the Grand Trunk should reach out to the Pacific for the vast traffic that awaits a road of such a character, that will materially shorten the ocean route between Eastern Asia and Western Europe; and we have often wondered why the Grand Trunk authorities did not years ago see the drift of events that have made such a step a present necessity. It is apparent that Mr. Hays was not long installed in the management before he saw the one thing which the Grand Trunk lacked, and in supplying this one thing he and his associates will be public benefactors while serving the interests of their own system.

POWER FROM THE TIDES AND WAVES.

The possibilities of the ocean tides and of ocean and lake waves as a source of power have not heretofore engaged more than fitful attention from engineers and inventors. In past ages, in the babyhood of machinery and the industries carried on by mechanical force, the need of power in large units was not so keenly felt. The wayward winds and mountain glen streams furnished nearly all that the primitive industries, such as those for grinding wheat and sawing lumber, required of the elements. Now the transformation of power into so many forms and for so many uses by electricity, steam and water, makes new and ever-increasing demands on the latent forces of the earth and air, and tidal power and wave power will soon come in for more serious attention than they have yet received.

On the sea coast of California, and at one or two points on Lake Ontario, among other places, wave motors have been successfully applied within the past three years to pumping water and other mechanical uses; but with the appliances so far used the power derived has not been in large units; and wave motion is subject to the same drawback as wind motion, that of being variable according to the weather.

If the power of the tides can be harnessed economically, we can obtain it in some places in large units, and it will be found more reliable even than that derived from falling water. Big rivers will sometimes run low from a drought; and under the influence of a long and strong east wind even the mighty