

Toronto, where the tail water could be discharged into the Don or Humber, or into some artificial channel created for that purpose. Every horse power would cost several times what it could be produced for by coal.

As the cost of an aqueduct increases with its size, and this size is limited by the quantity of water which can be withdrawn from Lake Simcoe, the cost will always be greater than the value of the quantity; especially as no considerable quantity can be withdrawn without reckoning with the people on the Severn.

In this issue appears a discussion on the practicability of the Lake Simcoe and Lake Erie water power and canal schemes, by Messrs. Keefer, Killey and Golding. Our readers are here given statements for and against the projected enterprises. The facts presented against the Lake Simcoe canal or tunnel are overwhelmingly against that scheme proving commercially profitable. As for the Lake Erie enterprise, Mr. Keefer and other able engineers, who have been over the ground, give it as their opinion that it would be cheaper to lead water from the Welland canal along the brow of the mountain to Hamilton, than to make a cutting through the high ridge of land lying between the mountain brow and Lake Erie, back of Hamilton.

The designs have at length been completed for the two new large cruisers for the British navy, "Powerful" and "Terrible." The work of building has already started, and is making good progress. The dimensions are as follows: Length, 500 ft.; breadth, 71 ft.; mean load draught, 27 ft.; displacement at load draught, 14,200 tons. The coal capacity at this draught is to be 1,500 tons, but by utilizing wing spaces and spare bunkers, each of the cruisers will be able to stow as much as 2,500 tons. The I.H.P. to be attained on the contractor's trial is, with natural draught in the stokeholds, 25,000, which it is anticipated will give a speed of 22 knots. This is 5,000 more H.P. than that of the "Blake." The remarkable feature of the machinery department is the water-tube boilers on the Belleville system, the introduction of which was discussed on several occasions in the House of Commons.

THE vote at the recent convention at Atlanta, Ga., of the American Street Railway Convention, in favor of holding next year's convention in Montreal, stood at 38, against 17 for Philadelphia. When the result was made known, Mr. G. C. Cunningham, of the Montreal Street Railway, made the following remarks, which were heartily applauded: "I wish to say a few words to you to show how very pleased indeed I am to know that next year Montreal will receive this large and important association. I can assure you that we will do everything in our power to remove any difficulties that may exist as to entering any supplies for the purpose of exhibition. I can confidently promise you that there will be no difficulty in bringing in supplies to Montreal any more than there was bringing them to Atlanta. We recognize in Montreal, as well as the residents of other places, that this exhibition, which is a part of the annual meetings, has become a very important feature and should be maintained and improved, if possible, every year; and, therefore, for that reason I can promise you that we will do all in our power to remove any difficulties that may exist in coming to Montreal. You will receive there a most warm and hearty welcome." All of which is seconded by the citizens of Montreal generally.

ONE branch of electric lighting has never received the attention which it deserves, remarks *Electrical Industries*, and that is small, isolated lighting. That there is an opening for small equipments that are easily operated there can be no question. A plant that can be used anywhere, that contains its own power generator, that is complete in itself, and requires little attention, is the kind of plant required. It must also be placed on the market at a reasonable price. Summer residences, stores, warehouses and numerous other places where a considerable amount of light is required, would be equipped with such plants. The electrical parts of such equipment is manufactured by a number of companies, but have not been offered in connection with a suitable power generator. The windmill, which has been experimented on by a number of prominent men, has not filled the requirements of such a plant. The gas engine, for certain purposes, has for some time proved itself efficient, but for electric lighting it has been little used. A number of individuals have been seeking to overcome the defects of the engine. Recent improvements, as shown in a number of engines installed for driving dynamos, have given a closer regulation to the speed and increased its usefulness for driving electrical machines. The attention that a gas engine requires is small, and will permit it to be installed where other forms of power would be too expensive on account of the attendant or engineer. As still further improvements are made, the knowledge of the machines is extended and the cost is reduced, the use of the gas engine and the isolated lighting plant of small size will become general.

MUCH attention has been given to some experiments which were recently made in Havre, France, to test the efficiency of a process of sanitation by means of electricity, and C. W. Chancellor, U.S. consul at that city, has submitted to the Department of State an interesting report of the results which were obtained. The basis of the system is sea water, and the electric current is used to decompose the chloride of magnesia, the chloride of sodium serving as a conductor. The result is a liquid, almost odorless, disinfectant of great power. Besides leaving no residuum when used for flushing, it is claimed that the liquid consumes or dissolves all the solid organic matters found in sewerage. Microbes of the species which live without air, when brought into contact with it, die through the freeing of the liquid from oxygen, whilst those microbes which require air are instantly killed, owing to the presence of the poisonous gas chlorine. The presence of sea water in the neighborhood, though rendering the process cheaper, is not essential to its success, as in its absence a solution of chlorate of magnesia can be used instead. The chemical action is similar and produces the same effects on microbe life. In either case a central station is erected, supplied with tanks for holding the liquid, and the necessary electric apparatus. In Havre, by a simple arrangement of pipes, the electrolyzed water was distributed through the streets, like ordinary domestic water. After being treated with the disinfectant, drains and closets in private houses, instead of being a source of danger, help to purify the general drainage of the city. The action of the liquid has been found to be not instantaneous, but continuous, as long as there is any excess of chlorine remaining. Five grammes of active chlorine are sufficient to disinfect the contents of an ordinary closet within about two hours. The excellent sanitary effects