

flame of each of the wicks, and it should never be left without an attendant when it is in operation. The mammoth flat wick lamp in use in nearly all our catoptric apparatus has given the best results and does not require continuous watching, and therefore is much better suited for our Canadian lights, which are maintained at a small expense, and are, as a rule, only supplied with one keeper. There are sixty-six dioptric lights in the Dominion, two of which are of the first order, twelve of the second order and six of the third order. The cost of a first-class revolving catoptric apparatus, made in this country, with a 12 feet iron lantern, is about \$2,913. The cost of a first-class fixed white dioptric apparatus, with lantern and lamps complete, made in England, is about \$14,800; but for complicated flashing lights, they reach as high as \$22,350.

The illuminant used in the Canadian lighthouse service is petroleum of Canadian production and manufacture, and is required to be of the best quality, double distilled, standard white, extra refined, free from acids or other impurities, to weigh, at 62° Fahr., not less than 7.85 lbs., nor more than 8.02 lbs. per gallon; to withstand a flash test of 115° Fahr. by the new standard pyrometer. In burning for twelve hours, the oil must produce a brilliant and nearly uniform flame, without crusting the wick or discoloring the chimney, and with a loss of not more than 15 per cent. in power during that period. About 100,000 gallons per annum are required for the service, and tenders were invited last winter for a supply for three years. The contract was awarded to the Imperial Oil Company, of London, Ontario, at 20 cents per imperial gallon, delivered at Hamilton or Goderich, and the oil delivered this season has been up to the standard quality.

With oil at such a low price, the quantity consumed becomes of very little consequence, and therefore the catoptric system, which consumes very much more than the dioptric, is the best suited for our requirements, as the cost of catoptric apparatus is very much less in the first instance than of dioptric.

The number of light stations in Canada with fixed lights is 467, and with revolving lights eighty-two, making altogether 549 light stations on the 31st December, 1883. The number of persons employed by the Government to attend to these lights is 656, and the salaries paid to them range all the way from \$80 for small river lights, up to \$1,500 per annum. The latter mentioned sum is paid to the keeper of Bird Rock light, who has also to fire a signal gun during foggy weather. He is required to keep two assistants, and he feeds them and pays them wages out of the salary allowed him: The situation is by no means an enviable one, as the keepers must remain on the rock all winter, and as it is high out of the water, with a small flat surface, they must exercise great caution while moving about, as it is usually covered with ice during the winter months. When the wind is high, they sometimes find it necessary to go from one building to another on their hands and knees, to avoid being blown off into the sea.

The salary usually allowed the keeper of a sea coast light is between \$300 and \$500, and there are often many applicants for