AMERICAN INSTITUTE OF CHEMICAL ENGINEERS

86

to 128 for the whole of Canada, and now the industry on this plan is almost extinct. However, during the last few years up to the outbreak of the war the exports of potash from Canada averaged about 500 barrels per year, valued at nearly \$25,000, or \$50 per barrel. While during the last century Canada was the world's chief producer of potash she has now become an importer, the imports before the war averaging about 250,000 pounds, valued at about \$9,000. During the first half of the last century Great Britain was the world's chief market for potash, and the pre-eminence of Canada in this industry is indicated by the fact that in 1831, for example, Great Britain imported potash and pearl ash to the amount of 228,757 cwt. of which 169,891 cwt. came from British America; 15,835 cwt. from the United States, and the balance from Russia and Poland.

Most of this output was exported direct to England, the shipments by the St. Lawrence often amounting to more than a million dollars a year. Considerable quantities went out from Upper Canada by way of Buffalo, and frequent schooner loads came down the Grand River every season for delivery here to New York and New England ports. Potash entered England free from Canada, but until free trade was adopted there was a duty on American potash of six shillings per cwt. The price in England in the thirties was about $\pounds 1/5/6$ for pearl ash, and $\pounds 1/4/6$ for potash.

A Canadian work of reference, published in 1863 and edited by Prof. Hind, the geologist, and T. C. Keefer, the well known civil engineer, described the process of manufacture in Canada as follows: "The produce of the forest of most importance next to lumber has always been pot and pearl ashes. Potashes are made from the crude ashes by dissolving the soluble portion of the ashes with water, evaporating to dryness and fusing at a red heat into a compact mass, which although gray on the outside is pink within. Pearl ash is made by calcining potashes upon a reverberatory hearth until the carbon and much of the sulphur are dissipated. Water is then added and a lye formed which, when evaporated to dryness yields the pearl ash of commerce. Canadian potashes contain on an average 60 per cent. of carbonate of potassa. Pearl ash contains generally about 50 per cent of caustic potassa."

In the fifties the cost of manufacturing was estimated at \$10 per barrel when the selling price in Montreal was \$40, and, therefore, the manufacture of potash was strongly urged as an industry whose