

tions, mined in 1882, and brought to the water-side during the winter season. It is estimated that the shipments of apatite for 1884 will equal 24,000 tons.

The methods of mining hitherto generally pursued in the apatite deposits of Canada allow of many improvements which would materially reduce the average cost of production, and give a permanency to the industry which the present modes of working can never attain. The regularity and persistence of the bedded deposits and of some of the veins warrant the introduction of systematic mining by sinking, driving, and stoping, with the aid of proper machinery for drilling, as well as for hoisting and pumping. The careful dressing and selection of the apatite for the market is also an element of much importance in the exploitation of these deposits. The cost of labor in the apatite-producing districts is comparatively low, and there are great numbers of beds now superficially opened, upon which regular mining operations, conducted with skill and a judicious expenditure of capital should prove remunerative. It must be added that the areas in question have as yet been very partially explored, and that much remains to be discovered within them, and also, there is reason to believe, in outlying districts, so that in the near future the mining of the apatite in Canada, will, it is believed, become a very important industry.

THE COST OF MINING

varies according to the size of the "pay streak" in the vein or deposits, and the freedom of the apatite from impurities, such as fragments of wall rock, pyroxene, limestone, and mica. Usually the cost of "cobbing" or hand dressing is greater than that of extraction; but \$4 to \$8 (16 to 32 shillings), may be considered the ordinary limits of the cost of the mineral ready for shipment.

THE COST OF TRANSPORTATION

depends upon local facilities. It is customary to do most of the hauling in winter, when the farmers, having little or no work for their teams, are ready to transport the apatite to the railroads or water navigation for a much lower rate per ton than during the warmer months. Also the snow and frozen rivers and lakes enables them to carry much greater loads. 10 to 20 cents per ton per mile, are about the limits of the cost of transfer by sleigh and wagon.

Most of the long distance transportation is done by rail. The railway companies, as a rule, supply bins for storage free of charge, and receive 1 to 1½ cents per ton per mile. Water transportation is done by barges, and ordinarily is less expensive than by rail.