

or three thousandths of chlorine, and in its purest state about 92.0 per cent. of tricalcic-phosphate. The analysis of a selected specimen gave me 91.2 per cent. of phosphate, but it is generally mingled with small portions of foreign matters, chiefly insoluble silicates. The analyses of seven specimens from different Canadian mines, published by Mr. C. G. Hoffman in 1878, showed from 85.2 to 89.8 per cent. of phosphate.

The market-value of apatite, which, as is well-known, is chiefly consumed for the production of soluble phosphate by the manufacturers of artificial fertilizers, varies greatly, other things being equal, with its purity. Thus, while at present the price in England is 1s. 2d. the unit for apatite giving by analysis 75 per cent. of tricalcic phosphate, there is paid an addition of one-fifth of a penny for each unit of phosphate above that percentage, so that a sample yielding by analysis 80 per cent. is worth 1s. 3d. the unit. The price in the English market is subject to considerable fluctuations, having within the last four years been as high as 1s. 5½d., and as low as 11d. the unit for 80 per cent. phosphate. The present may be considered as an average price.

The Canadian apatite shipped to England has yielded for various lots from 75 to 85 per cent., 80 per cent. being the average from the best-conducted mines, though lots from mines where care has been used in the dressing and selection of the mineral for shipment have yielded 84 and 85 per cent. Many of the smaller miners to which we have alluded, selling their product to local buyers, take little pains in dressing, and hence their product is apt to be lower in grade. It will be seen, from the rule adopted by foreign purchasers, that there is great profit in a careful selection and dressing of the mineral for market. The basis being 1s. 2d. the unit for 75 per cent., with a rise of one-fifth of a penny for each unit, it follows that while a ton of 75 per cent. apatite will bring only 87s. 6d., a ton of 80 per cent. will command 100s., and one of 85 per cent. 113s. 4d.

In the present state of the industry it is not easy to say what would be the cost of production. At the outcrop of the large masses of apatite, and in the open cuts and quarries already described, the cost of extraction and dressing is of course very variable, estimates in different deposits giving from \$2 to \$8 the ton. In Ottawa county, where, within the last four years, deposits have been opened and mined on a better system than heretofore, the figures of production and cost are instructive. According to the report of its