

and to thus adopt a new system of mining. The force of miners employed at the present time is greater than at any earlier period since this industry was started, the mines are much more productive, the output is more economically handled, facilities for transporting the ore have been greatly increased, freights to Montreal have been reduced and the importance of shipping the mineral in a high state of purity is now well understood by the mine owners. Since the opening of navigation this year, phosphate shippers have been particularly favoured by low freights to British and European ports, and already a large amount of ore has gone forward. In Montreal, at the various shipping points along the line of the Canadian Pacific Railway, and at the mines, there is a large quantity awaiting transportation, and the amount is being daily added to.

A number of prospectors have been out during the summer exploring the phosphate bearing district, and important discoveries have been made. Many of the recently discovered deposits have been partially opened up for the purpose of testing the properties preparatory to mining operations being engaged in on a permanent basis, and by next season some of these locations will, no doubt, yield abundantly and help to swell the annual output of the county. At the beginning of the year we predicted that about twenty-three thousand tons would probably be the total amount of phosphate to go forward before the close of navigation. The shipments will certainly aggregate 23,000 tons from the Ottawa district alone. This will be in excess of former shipments made in any one year from all the Canadian mines combined, and the quality of this year's output is of a higher grade than any that has ever before been shipped.

THE MINES.

High Rock Mine.—Of the mines in the Rivière du Lièvre district this one has been worked more steadily and has produced more phosphate than any other now in operation. For some years past the annual output has been increasing and this season the owners expect to forward not less than 6,500 tons. The daily yield of this mine has been increased by the introduction of steam power and the adoption of an entirely new system of mining. Steam drills and hoists are now in use where hand power alone had been employed; new

ground has been broken during the summer, which promises to lead to rich deposits; the force employed is greater than ever before, numbering 110 men, and the daily output averages about 30 tons.

Star Hill Mine.—Work was first started on this property by the Union Phosphate Mining and Land Company in May of last year, and for some months afterwards the attention of the company was directed chiefly to the erection of buildings and machinery, the opening of roads and in making other necessary preparations for permanent work. All this was thoroughly done, and mining operations have since been conducted on businesslike principles. A very small portion of this company's territory has yet been opened up, and, to judge from the appearance of present developments, it is not likely that it will be found necessary to break new ground for some time to come. The openings that are now being worked are yielding abundantly, and the amount of phosphate that will have been shipped from this mine during the present season will aggregate about 6,000 tons, a portion of which was mined last year but not forwarded. This, in addition to the erection of buildings, the construction of a tramway and other improvements on the property, and taking into consideration the fact that the company broke ground but a little more than a year ago, is certainly a most satisfactory showing and speaks well for the future of *Star Hill*. This mine gives employment to an average force of 80 men.

North Star Mine.—The result of the past year's operations at this mine has been most satisfactory to its owners, the Dominion Phosphate Company, who have saved no expense in thoroughly equipping the property and opening the mine in such a manner as to admit of permanent operations being carried on to best advantage. The force employed at present averages forty men, and the daily output varies from 10 to 12 tons. The product of this mine has the reputation of being of a very high grade not excelled by that of any other phosphate mine in the country. This company has 30 men employed at its "Washington" mine, and work is progressing very satisfactorily. The mine is developing into a valuable property.

Little Rapids Mine.—During the past two months a steady improvement has been noticeable in the principal shaft, and some new ground has quite recently been opened, exposing an extensive deposit of mineral. In the shaft the body of ore continues to increase in size, and in the drifts the men are working in solid mineral. The phosphate that is being raised from this mine is quite equal to that of the *North Star* if not of a higher grade.

Emerald Mine.—From the main body of ore at this mine the output is now being handled at a much reduced cost to formerly. Hoisting has been dispensed with, and both the mineral and raise are now run out on a tramway through a tunnel. Everything connected with the management of the Ottawa Phosphate Company's mining operations is being thoroughly systematized with a view to raising and handling the product of this valuable mine at a minimum of cost. The body of mineral now exposed on the property is enormous and apparently inexhaustible. The average force of men employed does not exceed 65, and during the month of July the output was upwards of 600 tons of high grade phosphate, dressed and deposited in the ore bins. The company proposes extending operations, and is now making preparations for the accommodation of a larger number of miners. A new boarding house is in course of erection capable of sitting one hundred men in the dining room, and additions will be made to the other buildings on the property. The shipments from this mine for this season will aggregate about 5,000 tons.

Numerable less important mines than those mentioned are being worked in the Du Lièvre district, and are contributing largely to the general output. The mineral that has been forwarded from these mines is of a very fair quality and gives evidence of careful cobbling.

The Lièvre River Phosphate and Land Company, incorporated on the 4th July of this year, has already begun operations on some of its property, and we understand that good results have been attained. We are not in possession of any particulars of this company's operations to date, but hope to be informed in time for our next issue.

McLaurin Mine, in the Township of Templeton, continues to be as productive as at any time since the mine was opened and the mineral at the present level appears to be of a more solid character than it was nearer the surface. The force employed on this property is not so large as at the other important mines to which reference has been made, but the deposit is very productive and the mineral raised is of a very high grade. This year's shipments have amounted to about 2,500 tons, and the number of men employed averages 30 to 35.

The Gemmill Mine, in Wakefield Township, has produced more phosphate this season than last, and some new openings that have been made give promise of yielding large quantities of high grade ore, in fact the mineral that has been shipped from this property during the past five or six years has invariably assayed, in cargo lots, above \$2 per cent.

The total amount of Phosphate forwarded from the mines in the Rivière du Lièvre district since the close of navigation of 1883 has amounted to 16,590 tons. About 75 tons are now being forwarded daily to the C.P.R. station at Buckingham and to the shipping point on the Ottawa river.

Phosphate Quotations.

Latest advices from Liverpool, London and Glasgow report Canadian Phosphate firm at 1s. 1½d. per unit for 75 per cent., with a fifth of a penny rise. Sales have been made at this price during the month of lots consigned early in the season when freights were low and returns have been satisfactory, showing the shipments to have run 82 per cent. and higher.

FREIGHTS.

Although rates are much higher than at the opening of navigation, a fair amount of tonnage is offering at reasonable rates. To Liverpool, London or Glasgow, sailing vessels are carrying phosphate at 6s. to 7s. 6d., and steamers at 10s. per ton. A quantity has recently gone forward at these figures.

MICA IN CANADA.

Until within the past two or three years it had been thought that mica, of good quality, did not occur in economic quantity in Canada, but the constantly increasing demand for it has encouraged prospectors to search diligently, and the result has been the discovery, in many localities, of deposits that are capable of producing this mineral not only in large quantities, and in plates, or sheets, of merchantable size, but equal in quality to that found in any part of the world. In the United States it has been found in some of the Western Territories, though not of a high grade in its colour or transparency, and it occurs more or less in some of the Atlantic States. In Maine and New Mexico, a small quantity has been mined, while New Hampshire and the State of North Carolina have been the principal sources of supply for the American and Canadian markets for many years past. The best quality of mica that has yet been produced in America comes from New Hampshire, while a much larger quantity has been mined in North Carolina, and an excellent quality. A great variety of mica is known to occur in various parts of Canada, and for some years past a fair quantity, of a second or third quality, has been mined and sold to stove manufacturers and dealers to be used chiefly in repairing. At Sydenham, to the North of Kingston, a mine is being vigorously worked, and is producing an enormous quantity of amber, or wine coloured, mica which finds a ready sale both in Canada and in the