

THE CANADIAN SLATE INDUSTRY.

OUR article on the slate industry in Canada, which appeared in the CANADIAN ARCHITECT AND BUILDER for June, seems to have awakened considerable interest, judging from correspondence on the subject which we have since received. To persons who may not have read the article in question, we would say that it referred to the complaint of a number of Canadian roofers, that they are placed at a serious disadvantage owing to the refusal or inability of the Rockland Slate Co., of Quebec, to supply them with slate, rendering it necessary to import from the United States subject to an import duty of \$1.00 per square. It was pointed out that the large and mpidly-increasing demand for sinte opened the door for profitable competition with the Rockland Co., in its Canadian production ; also that at Melbourne, Quebec, there is a quarty of large extent and excellent quality, partially developed which, owing to the death of its owner, can now be purchased at a very moderate figure, and would undoubtedly richly reward a company with the capital and knowledge requisite for its operation.

Believing that by calling attention to what seems to us to be a rare opening for profitable business enterprise, we shall be doing the roofers and slate consumers of Canada a service, as well as assisting the development of the country's incustries, we append a few additional particulars which have come into our possession during the present month.

The present protective duty on slate is \$1 per squar-, instead of 80 cents per square as previously stated. While the present domand is brisk, it would undoubtedly increase many fold if production were stimulated by competition. Owing to the difficulty experienced at present in getting a supply, architects and builders are obliged to specify other roofing materials instead of slate. On this point a member of a Canadian roofing firm recently wrote as follows:

"We have to book our orders with the Company about two months before the slates are required. They had orders for over 6,000 squares on their books on the above date, and more coming in by every mail, with letters simply blackguarding them for the delay in executing former orders. Six thousand squares per month does not represent the actual demand for slate, because we roofers allvoatize galvanized iron and lin wherever we can, simply because we cannot get slate when required. Architects and builders prefer slates to galvanized iron and tim if they could got them, because they are cheaper and more durable.

At present the slates from the United States are kept out from the Canadian market by a duty of one dollar per square, but if some other companies do not open up new quarries, we slaters will have to petition the Government to take off the duty from slate. The average price of the New Rockland slate on board cars at 0. T. R. slding is four dollars and zo cents per square for No. 1, and 33. to per square for No. 2.

You will find enclosed quotations I received last spring from the largest firm of slate manufacturers in the States; their quotations are for sea green slate which is far inferior to the Canadim slate on account of its fading color, yet it cost \$4.75 per square, duty paid, at Sherbrooke, P. Q. Add age per square freight from Sherbrooke to Richmond, \$4.96 per square, 86 cents per square higher than the New Rockland slate.

Five years ago it cost the New Rockland Co. to produce slate ready for market, \$1.75 per square, and I believe it costs about roc. or 15c, per square less at present. Of course if you ask the Company if they are making money, they will soon tell you they never received a cant dividend from this quarry, but is it likely that a man of business like Geo A. Drummond, who is president of the Company, and also president of the Board of Trade, Montreal, would invest \$too,coo to build a milway to the quarry after running said quarry ao years, without a cent dividend f I think I know this Company too well to believe them capable of such folly. I would like to see a Company formed to work the Melbourne quary. In any opinion it is a far better quarry than the New Rockland. I bought some of the slate they had on hand when Mr. Walton died, I could not wish for better slate, They have better clearage than the Rockland slate, although both quarries are on the same formation.

\$35,000 or \$30,000 working capital would be plenty to develop the Melboune quarry, and put it in a shape to turn out two or three thousand squares per month. All the buildings are in good repair. I believe fifteen or eighben of the houses used to rest for \$5 per month. There ure on the premises a very good steam engine and steam pump, both in good order, and a large quantity of tools and raiks, etc., in fact almost everything required to commence operations at once.

I am informed by quarrymen who worked for Mr. Wakon, that if he had employed practical slate men as managers, that quarry would be a good paying concern to-day, such as New Rockland is."

We understand that slate has been produced at the Melbourne quarry at \$1.75 per square, at which price the contractor is said to have dose well. This means \$2 or \$2.35 per square on G. I. R. cars. The New Rockland Company is now charging for No. \$a1 et \$4 per square, and for No. a. \$3 per square, and in addition 40 cents per square fright to the G. T. R. over their own tramway. This slate band is said to be the best and probably the only valuable one in Canada. One and a half miles of the band runs through the Melbourne property. In the opinion of those familiar with the business, the production of this property should easily be made 1,000 to 2,000 square, in one year, which, at a profit of only \$\$ per square, the amount of the protective duty, would net a handsome profit. New Rockland quarry, we are informed, now produces 3,000 squares per month. On the basis of \$\$ t profit per square, we believe a Company with \$\$50,000 capital, might reasonably hope to realize the following result from the operation of this property :

Purchase price, say \$25,000; working capital, \$25,00050,000	\$ 6,000
Interest	12,000
Less interest on \$50,000 invested	\$18,000 3,000

\$15.000

This result should be worked out owing to the present state of the state trade and the developed state of the property. We should like to see the right person or persons avail themselves of the opening, reap advantage themselves, and remove the disabilities under which the users of state in Canada are at present laboring.

CLAY ROOFING-TILE.

I N a recent number of the Brick, Tile and Metal Review, we find the L following account of the manufacture of roofing-tile as carried on at Akron, Ohio. Ordinary brick clay is used. "The grinding and tempering is done in tracers, such as used for sewer pipe. When tempered, whatever is put into the cylinder is forced out at the end of the stroke in a series of parallel plates, about 6-inches wide by 34 inch thick, and extending along until cut up in lengths. Considerable oil is used to keep the clay-smooth and to keep the freshly pressed plates from sticking. These plates are adjusted one after another, on a series of disks arranged on the circumference of a circular revolving disk. This disk moves through one-sixth of its circumference at a stroke, boring in succession each plate of clay spread out on its table under a compound piston. This piston is arranged to cut off the edge of the plate in a symmetrical shape, and then to press it into the uired shape. The pressed tiles are removed and set in piles to dry. Drying takes about two weeks in a steam-heated chamber, as the oil used in the pressing of the clay hinders the escape of the water. They are finally piled in loose order in a kiln to a depth of about 6 feet, and subjected to a light burn. The kilns employed are circular downdrafts, The ware is of several classes. Shingle tile, which are more like shingles than anything else, are slabs of burnt clay 12 x 6 inches x 16 inch, with holes in proper places for nailing them to the roof. Their uses are as nearly like those of a real shingle as well can be. About five inches of each tile are exposed to the weather. The so-called 'diamond-tile' are made to hook into each other, but are also supplemented by nails. They are more ornamental than the shingle tiles, but as they are more dependent on each other for support, they are not so durable or strong. One of the chief objections to a tile roof is its weight ; a 10-foot square of plain shingle-tile weighs about 1,100 pounds, and the same area of diamond tile weighs from 650 to 850 pounds. The advantages claimed for them are durability, beauty, and immunity from danger by fire or lightning."

THE EFFECT OF FROST ON STONE.

THE principal danger of exfoliation arises from the expansion of the moisture contained in the stone under the influence of frost, says Mr. G. R. Burnell in a recent issue of one of our foreign exchanges, and a very excellent process was invented by M. Brard for the purpose of ascertaining the probable extent due to this cause. M. Brard, in his experiments upon the resistance of stones, caused them to be boiled for half an hour in a saturated solution of the sulphate of soda. They were then withdrawn and allowed to stand in a flat vessel, at the bottom of which was a small quantity of the same solution, the first efflorescences were washed off, and the degradation of the stones during the next five or six days, under the effect of the continued efflorescence, was taken as an indication of the probable extent to which they would be affected by frost. In the first volume of Rondelet's "Art de Batir," page 307 (edition 1842, Paris), M. Brard's process is described in detail; but some very curious experiments recorded in Vol. 7. "Ire serie des Annales des Poats et Chausses," by M. Minard, together with an article by M. Vicat, inserted in the same volume, throw very considerable doubts upon the exact amount of dependence to be placed on its indications. M. Vicat, indeed, very properly observes that it still remains to be proved that the expansive action of water in freezing is identical with that of crystallization, which can only produce energetic effect at temperatures between 68° and 86° F. According to this very accurate observer, stones which are exposed to a southerly aspect, on the north of the equator. are more affected by frost than those exposed to the north ; and the most efficient protection to materials of this description of a porous nature is a coating of oil paint or any other fatty pigment which prevents moisture from being driven or absorbed into the stone. M. Minard recommends that stone be quarried in the spring, and not employed in a building until it has been exposed to the effect of one winter.