and by the ordinary mining man the concentration would be thought to be sufficiently pure. The chief use of corundum, however, is in the making of vitrified corundum wheels and if more than two or three per cent. of felspar be left in the corundum this will flux and will interfere with the bonds which are used in making the wheels. It is necessary, therefore, to re-concentrate the already concentrated material. It is found that Hooper pneumatic jigs will successfully handle the sizes between 24 and 90 and these sizes are, therefore, fed from the bins to the Hooper machines. The coarser and finer sizes, however, are fed to four concentrating tables which are situate in the grader building. This concentrating is very carefully done, and as the material fed on to the tables has already been accurately sized, a very perfect product is obtained. After being reconcentrated, all the corundum that has gone over the concentrating tables instead of the Hooper machines, is again dried, and all the corundum is then re-sized and let run into a number of other bins which are reserved for the re-concentrated material. From the bottom of these bins it is drawn into 100-lb. duck bags and is then ready for the market.

The motive power consists of four boilers of 150 H.P. each, together with three engines, one of 225 H.P., one of 125 H.P. and one of 35 H.P. for the running of the dynamo and of the lathes and other special machinery. In addition to the engines there is a new seventeen drill Rand compressor which was installed with the idea of equipping not only for present quarrying, but also for underground work should this ever become necessary.

The shipping point of the company is Barry's Bay on the Canada Atlantic Railway. The mill is twenty miles from the railway, but as this twenty miles consists of water navigation the company's transportation facilities are good. A tramway has been built from the mill to the company's what on the York River. Here the corundun is loaded on the scows which the company's steam tug tows to the what at Barry's Bay. The tug can easily handle two scows carrying from twenty to thirty tons each. There is a siding from the railway to the water at Barry's Bay and the Government is now building a new wharf there.

On account of the hardness of corundum, any weakness that may exist in the mill is sure to be found out. The company has had a number of rather serious breakages which have delayed them considerably. The extra high percentage of purity to which it is necessary to bring the concentrates has also made it necessary to go slow in balancing up the mill. The company expects, however, that before long it will be turning out twenty tons per day instead of twelve. The crushing capacity of the mill is nearer four hundred than two hundred, and the floor space is ample for the addition of new concentrating machines: hence, as the market expands it will be a very simple thing for the company to increase its capacity. At present the company is fully supplying the demand. By lowering the price, the demand can be rapidly increased. As production on a large scale is much cheaper than production on a small scale, the company's policy is to increase its output as rapidly as possible, and at the same time to lower the price to a point where the demand will take care of the output. In addition to the advantages of cheaper production, this policy also renders competition on a small scale almost impossible, and it is questionable whether other companies are in a position to produce on a large scale.

The head offices of the company are in Toronto and it is from there that its selling is at present conducted. It has established branch offices in both Paris and Berlin.

The Mines of Ontario.

By W. E. H. CARTER, B.A.Sc.*

A very wide field for discussion is laid open by the title chosen for this paper, too wide, in fact, to be here gone into fully, so that only certain phases of the mining operations will be dealt with, and since the mines of eastern Ontario formed the subject of a paper (1) read before this Society at the 1902 session more attention will here be paid to mining ir western Ontario. Probably the best ends will be served by making the present status of the mining industries the main topic and attempting to set forth the reasons for the abnormal inactivity in many of the mining districts.

The gold areas in particular are placed in a rather critical position, as the culmination of an unfortunate policy or method of mining which has prevailed from the start, and which may be summed up in the words, "inefficient management." This has arisen from the persistent disregard, at all but a few mines, of the need of employing a capable engineer as head, and out of the fact that few companies start mining with a really bona fide intent to see the undertaking through on a proper business basis. Until the trouble is squarely faced, realized and remedied, the same disappointing results from the mining ventures will without doubt continue.

The important historical points of the different mineral industries, so varied in this province, will also be dealt with, in connection with the above and in order to collectively summarize the mining development from the beginning.

While the mining industries in the eastern portion of Ontario are much more varied than elsewhere and the number of mines large, the value of the output is small compared with that of the fewer metals or minerals raised from western Ontario, which extends from Nipissing district west to Rainy River district, and this is due mainly to the product of the nickel-copper and iron mines of the latter area, and to the fact that practically the whole product is metalliferous and more There are, however, non-metallic minerals being valuable. raised, such as building stones of the greatest variety and value, from end to end of the western half of Ontario, of which but little is heard in the east on account of their distant situation and of the presence in the east of sufficient of the same class of materials for all ordinary requirements. They play an important part in the development of that end of the province simply by supplying local needs; but their value lies rather in a greatly increased future demand, a matter merely of time, than in the present small consumption. Of them no further mention will be made, since their operation comes more under the head of commercial than mining undertakings.

The facilities necessary for economic and profitable mining in Ontario are yearly increasing by the location and construction of new railways, in particular throughout this western end of the province, where they are most needed, by the settling of the country, and by the development of water powers for the transmission of electric energy to the mining and manufacturing centres. The prospector and farmer no longer confine their efforts to the older known areas, but have advanced for a hundred or two hundred miles north of the main line of the C.P.Ry. A good example of this is in the Temiscamingue country, where as a natural result a railway, the Temiscaming & Northern Ontario, has followed them. Not

^{*}Paper read at the Sixth Annual Meeting of the Canadian Mining Institute.

⁽¹⁾ Can. Min. Inst., Vol. V., "Eastern Ontario: A Region of Varied Mining Industrics," by Willet G. Miller.