

procedure will be given under each mineral so treated. Besides using these minerals in their crude state each one, after previous grinding, was exposed for about fifteen minutes to the heat of a blast lamp and many brilliant colours were obtained by this oxidizing process.

It would appear from remarks made from time to time by interested paint manufacturers that they look for material that is suitable for their particular machines rather than provide machines suitable for the material. I have found, that, although many of our ochres and clays are free from grit, it is present in others. In condemning those containing gritty material that, in many cases, does not constitute one per cent and which cannot possibly detract from its body, some of the most valuable pigments must be ignored. I found no difficulty in reducing these ochres and clays, and, although they appeared gritty in grinding they eventually made a perfectly smooth paint. I have also heard from paint manufacturers that we have no Canadian ochres fit for use, more especially yellow ochre. To a certain extent this is true respecting this particular colour for although we have many bright coloured ochres which have the desired shade when in dry powder, they become brownish when ground in oil. If this ochre be mixed with forty to sixty per cent of some light coloured material such as clay, gypsum, etc., it will then be found to possess a larger percentage of oxide of iron than most of the imported material and will at the same time produce the desired shade of colour. I may mention that a sample of imported yellow ochre, purchased in this city, was found to be extremely gritty, much more so, indeed, than many of our local ochres. Mr. M. E. Connor found it to contain seventy-five per cent insoluble and ten per cent of oxide of iron; from this we may infer that either a ferruginous clay, or a clay mixed with ochre, was used.

Many of our metallic minerals, when ground in oil, were found to possess very strong covering bodies, several of which will cover well with one application. The questions naturally arise, will those colours stand, most of them being subject to oxidation by the atmosphere; and what length of time will be required to cause this oxidation. Judging from my observations of minerals exposed to the atmosphere in the Museum yard, their deterioration would require a greater lapse of time than is required to deface our modern paints.*

About two years ago I discovered that magnetic iron ore, when ground in oil, had a very strong body and would cover almost any

* When pointing out the durability of some of these metallic paints to a certain paint manufacturer he replied that the paints that required renewal every two years were those mostly supplied.